XR-3208MK2/3501MK2/3509

SERVICE MANUAL

AEP Model
UK Model

Photo : XR-3501MK2

Model Name Using Similar Mechanism	XR-3500
Tape Transport Mechanism Type	MG-36SZ6-32

SPECIFICATIONS

Cassette player section

Tape track	4-track 2-channel stereo
Wow and flutter	0.13 % (WRMS)
Frequency response	30 – 15,000 Hz
Signal-to- noise ratio	55 dB

Tuner section

FM

Tuning range	87.5 – 108.0 MHz
Antenna terminal	External antenna connector
Intermediate frequency	10.7 MHz
Usable sensitivity	12 dBf
Selectivity	70 dB at 400 kHz
Signal-to-noise ratio	65 dB (stereo), 68 dB (mono)
Harmonic distortion at 1 kHz	0.5% (stereo), 0.3% (mono)
Separation	35 dB at 1 kHz
Frequency response	30 – 15,000 Hz
Capture ratio	2 dB

MW/LW

Tuning range	MW: 531 – 1,602 kHz LW : 153 – 281 kHz
Antenna terminal	External antenna connector
Intermediate frequency	450 kHz
Sensitivity	MW: 30 µV LW : 50 µV

Power amplifier section

Outputs	Speaker outputs (sure seal connectors)
Speaker impedance	4 – 8 ohms
Maximum power output	XR-3208MK2/3509 : 15W × 4 (at 4 ohms) XR-3501MK2 : 20W × 4 (at 4 ohms)

General

Output lead (XR-3501MK2)	Power amplifier control lead
Tone controls	Bass ±8 dB at 100 Hz Treble ±8 dB at 10 kHz
Power requirements	12 V DC car battery (negative ground)
Dimensions	Approx. 186 × 57 × 170 mm (w/h/d) not incl. projecting parts and controls
Mounting dimension	Approx. 182 × 53 × 155 mm (w/h/d) not incl. projecting parts and controls
Mass	Approx. 1.2 kg
Supplied accessories	Parts for installation and connections (1 set) (XR-3501MK2) Front panel case (1)

Design and specifications are subject to change without notice.

使用時は添付資料も参照のこと
Refer to the additional documents.

FM/MW/LW CASSETTE CAR STEREO

SONY®

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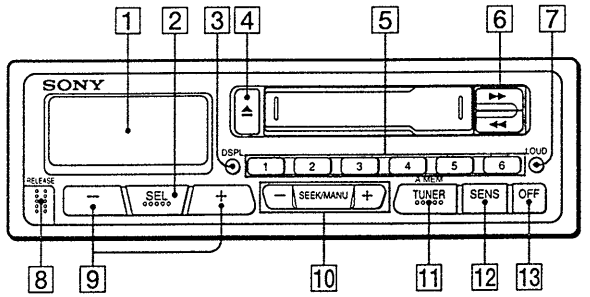
Button Locations



Refer to the pages in ● for details.

1 Display window
2 SEL (control mode select) button ❺❽
3 DSPL (display mode change/time set) button ❺
4 ⏏ (eject) button ❻
5 During radio reception: Preset number buttons ❼
6 ◀◀/▶▶ (fast winding)/DIR (tape transport direction change) buttons ❺❻
7 LOUD (loudness) button ❽
8 RELEASE (front panel release) button ❹❽
9 (volume/bass/treble/balance/fader control) buttons ❺❽
10 SEEK/MANU button ❻❼
11 TUNER/A.MEM (radio on • band select/automatic memory) button ❻❼
12 SENS (sensitivity adjust) button ❻
13 OFF button ❹

Setting the Clock

The clock has a 24-hour digital indication.

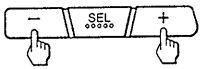
For example, setting it to 10:08

1 Display the time.
(Press the DSPL button during unit operation.)

2 Press the DSPL button for more than two seconds.

The hour digit(s) blinks.

Set the hour digits.

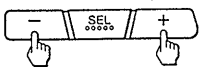


(to go back) (to go forward)

3 Press the SEL button momentarily.

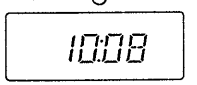
The minute digits blink.

Set the minute digits.



(to go back) (to go forward)

4 Press the DSPL button momentarily.



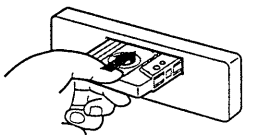
The clock activates.

Note
The clock cannot be set unless the power is turned on. Set the clock after you turn on the radio, or during tape playback.

Cassette Player Operation

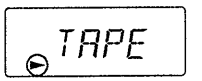
Listening to Tape Playback

After inserting the cassette, playback will start automatically.

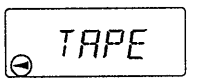


To change the tape direction,
press both the ◀◀ and the ▶▶ buttons at the same time.

Indication of Tape Transport Direction



The side facing up is being played.



The side facing down is being played.

Tape playback automatically changes direction at the end of the tape.

Note
Before turning off the unit, eject the tape to avoid tape damage.

Ejecting the Cassette

Press the ⏏ button to stop playback and eject the cassette.

This section is extracted from XR-3208MK2's instruction manual.

Fast-winding the Tape

Direction indicator*	To advance	To rewind
►		
◄		

To resume playback, press the other fast-winding button partially until the locked button is released.

* *The ◄ or ► indicator will flash while fast-winding the tape.*

Radio Reception

Searching for Stations Automatically

— Automatic Tuning

1 Select the desired band.

FM1 → FM2→ FM3 →
MW → LW → FM1

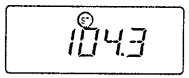
2 Press either side of the SEEK/MANU button momentarily to search for the next station (automatic tuning).

For lower frequencies

For higher frequencies

The scanning stops when a station is received. Press either side of the button repeatedly until the desired station is received.

When an FM stereo program with a sufficient signal strength is tuned in,



the "ST" indication will appear.

To avoid the automatic tuning from stopping on stations too frequently (local seek mode), press the SENS button momentarily to get the "LCL" indication.

Only the stations with relatively strong signals will be tuned in. The local seek mode functions only when the automatic tuning is in operation.

If FM Stereo Reception is Poor — Monaural Mode

Press the SENS button momentarily.
→ "MONO" appears on the display.
The sound will improve, but it will become monaural.

Tuning in by Adjusting the Frequency — Manual Tuning

1 Select the desired band.

FM1 → FM2→ FM3 →
MW → LW → FM1

2 Press and hold either side of the SEEK/MANU button.
Release the button when the desired station is received.

For lower frequencies

For higher frequencies

PREVENT ACCIDENTS!
When tuning in during driving, use the automatic tuning and the memory preset tuning instead of the manual tuning.

Memorizing Stations Automatically

— Automatic Memory Function

Stations with the clearest reception are automatically searched and memorized on each band (FM1, FM2, FM3, MW and LW). Up to 6 stations on each band can be stored on the preset number buttons 1 to 6 in the order of band frequency.

1 Select the desired band.

FM1 → FM2→ FM3 →
MW → LW → FM1

2 Press the TUNER/A.MEM button for more than two seconds.

The unit will be start scanning the selected band and memorize the tuned stations on the preset number button 1 through 6 automatically.

Memorizing Only the Desired Stations

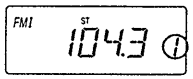
1 Select the desired band.

FM1 → FM2→ FM3 →
MW → LW → FM1

2 Tune in the station which you wish to store on the preset number button.

3 Press and hold the desired preset number button (1 to 6) for about two seconds until you hear a beep tone.

The number of the pressed preset number button appears in the display window.



Up to 6 stations on each band (FM1, FM2, FM3, MW and LW) can be stored on the preset number buttons in the order of your choice. Therefore, 18 stations can be memorized on FM.
If you try to store another station on the same preset number button, the previously stored station will be erased.

Receiving the Memorized Stations

1 Select the desired band.

FM1 → FM2→ FM3 →
MW → LW → FM1

2 Press momentarily the preset number button (1 to 6) on which the desired station is stored.

Note
If you press the preset number button for more than two seconds, the currently received station will be memorized. To receive the previously memorized station, make sure that the preset number button is pressed only momentarily.

Other Functions

Adjusting the Sound Characteristics

1 **Select the item you want to adjust by pressing the SEL button repeatedly.**

VOL (volume) → BAS (bass) → TRE (treble) → BAL (balance) → FAD (fader) → VOL (volume)

2 **Adjust the selected item by pressing either the − or + button.**

EN

Adjust within three seconds after selecting. (After three seconds the button will again serve as volume control button.)

Enjoying Bass and Treble at Low Volume

— Loudness Function

Press the LOUD button. → "LOUD" will appear on the display.
Bass and treble will be boosted. To cancel, press again.

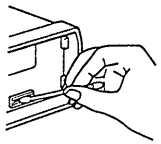
Muting the Beep Tone

Press the 5 button while pressing the SEL button.
To reactivate the beep tone, press these buttons once more.

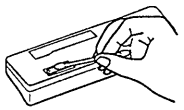
Maintenance

Cleaning the Connectors

The unit may not function properly if the connectors between the unit and the front panel are not clean. In order to prevent this, open the front panel by pressing the RELEASE button, then detach it and clean with a cotton swab dipped in alcohol. Do not apply too much force. Otherwise, the connector may get damaged.



Main unit



Back of the front panel

Connections

Caution

- This unit is designed for negative ground 12 V DC operation only.
- Connect the power connecting cord ⑤ to the unit and speakers before connecting it to the auxiliary power connector.
- **Run all ground wires to a common ground point.**

Connexions

Précautions

- Cet appareil est conçu pour fonctionner sur courant continu de 12 V avec masse négative
- Branchez le cordon d'alimentation ⑤ sur l'appareil et les haut-parleurs avant de le brancher sur le connecteur d'alimentation auxiliaire.
- **Rassemblez tous les fils de terre en un point de masse commun.**

Anschluß

Vorsicht

- Dieses Gerat ist ausschließlich fur eine negativ geerdete 12-V-Autobatterie bestimmt.
- Verbinden Sie das Netzverbindungskabel ⑤ mit dem Gerat und den Lautsprechern, bevor Sie es mit dem Hilfsstromanschluß verbinden.
- **Leiten Sie alle Erdungskabel an einen gemeinsamen Massepunkt ab.**

Collegamenti

Attenzione

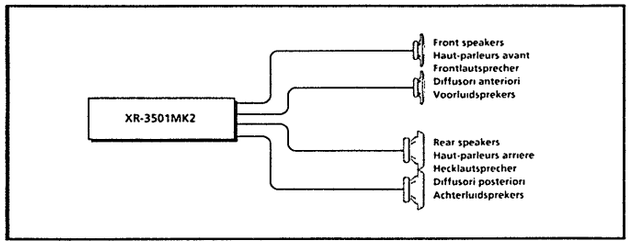
- Questo apparecchio è stato progettato per l'uso solo in funzionamento a 12 V CC con massa negativa.
- Collegare il cavo di collegamento dell'alimentazione ⑤ all'apparecchio e agli altoparlanti prima di collegarlo al connettore di alimentazione ausiliare.
- **Portare tutti i cavi di massa a un punto di massa comune.**

Aansluitingen

Let op!

- Dit apparaat is enkel ontworpen voor gebruik op 12V gelijkstroom, negatief geaard.
- Sluit het netsnoer ⑤ aan op het toestel en de luidsprekers vooraleer u het op de hulpvoedingsaansluiting aansluit.
- **Sluit alle aarddraden op een gemeenschappelijk aardpunt aan.**

Connection Diagram/Schéma de connexions/Anschlußdiagramm/ Schema di collegamento/Aansluitingsschema



Notes on the control leads
The power antenna control lead (blue) supplies 12V DC power when you turn on the unit
Notes on speaker connections
- *Use speakers with an impedance of 4 to 8 ohms and with adequate power handling capacities. Otherwise, the speakers may be damaged*
- *Do not connect the terminals of the speaker system to the car chassis, and do not connect the terminals of the right speaker with those of the left speaker*
- *Do not connect the speakers in parallel*
- *Do not connect any active speakers (with built-in amplifiers) to the speaker terminals of the unit. Doing so may damage the active speakers. Therefore, be sure to connect passive speakers to these terminals*

Warning
If you have a power antenna without a relay box, connecting this unit with the supplied power connecting cord ⑤ may damage the antenna.

Remarques sur les fils de contrôle
Le fil de contrôle de l'antenne électronique (bleu) fournit du courant continu de 12V lorsque vous mettez l'appareil sous tension
Remarques sur la connexion des haut-parleurs
- *Utilisez des haut-parleurs avec une impédance de 4 à 8 ohms et qui peuvent supporter l'alimentation fournie sinon ils risquent d'être endommagés.*
- *Ne pas connecter les bornes du système de haut-parleur au châssis de la voiture et ne pas raccorder les bornes du haut-parleur droit aux bornes du haut-parleur gauche.*
- *Ne pas essayer de connecter les haut-parleurs en parallèle.*
- *Ne pas connecter d'enceintes acoustiques actives (avec amplificateurs intégrés) aux bornes d'enceinte de cet appareil, pour éviter d'endommager les enceintes. Veiller à raccorder des enceintes passives.*

Avertissement
Si vous disposez d'une antenne électrique sans boîtier de relais, le branchement de cet appareil au moyen du cordon d'alimentation fourni ⑤ risque d'endommager l'antenne.

Hinweise zu den Steuerleitungen
Die Motorantennen-Steuerleitung (blau) liefert eine Gleichspannung von +12V, wenn Sie das Gerät einschalten
Hinweise zum Lautsprecheranschluß
- *Verwenden Sie Lautsprecher mit einer Impedanz zwischen 4 und 8 Ohm und ausreichender Belastbarkeit. Ansonsten können die Lautsprecher beschädigt werden.*
- *Verbinden Sie die Lautsprecheranschlüsse nicht mit dem Wagenchassis, und verbinden Sie auch nicht die Anschlüsse des rechten mit denen des linken Lautsprechers.*
- *Schließen Sie niemals Lautsprecher parallel an.*
- *An die Lautsprecheranschlüsse dürfen nur Passivlautsprecher angeschlossen werden. Schließen Sie auf keinen Fall Aktivlaut-sprecher (mit eingebautem Verstärker) an, da diese beschädigt werden könnten..*

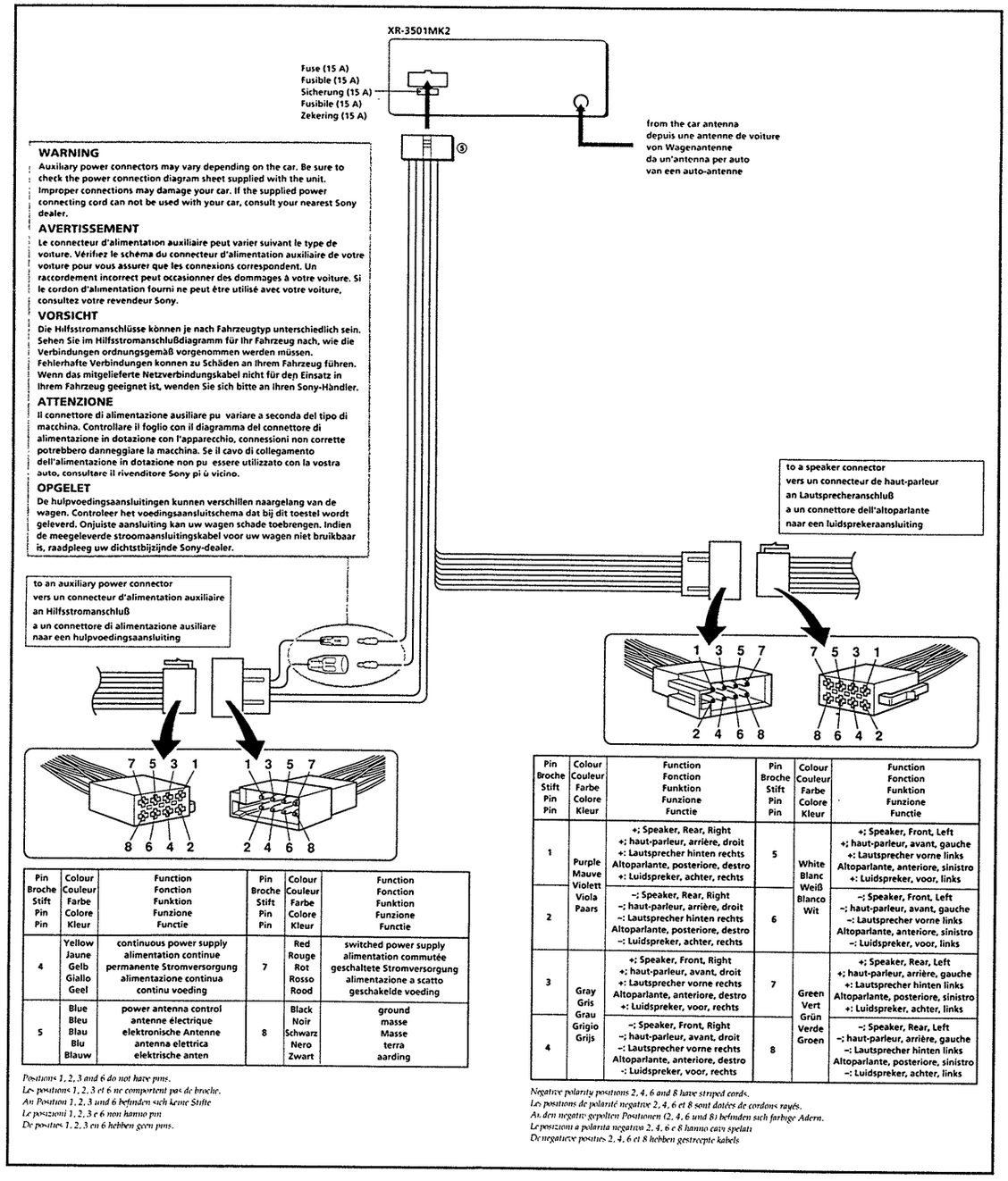
Warnung
Wenn Sie eine Motorantenne ohne Relaiskästchen verwenden, kann durch Anschließen dieses Geräts mit Hilfe des mitgelieferten Netzverbindungskabels ⑤ die Antenne beschädigt werden

Note sui cavi di collegamento
Il cavo di controllo dell'antenna automatica (blu) fornisce 12V CC quando si accende il sintonizzatore.
Note sul collegamento dei diffusori
- *Usare diffusori di impedenza compresa tra i 4 e 8 ohm e con capacità di potenza adeguata, altrimenti i diffusori possono essere danneggiati.*
- *Non collegare i terminali del sistema diffusori al telaio dell' auto e non collegare i terminali del diffusore destro a quelli del diffusore sinistro*
- *Non collegare i diffusori in parallelo.*
- *Non collegare diffusori attivi (con amplificatori incorporati) ai terminali diffusori dell'apparecchio, perché i diffusori attivi potrebbero essere danneggiati. Collegare solo diffusori passivi a questi terminali*

Avvertenza
Se l'antenna che collega l'apparecchio al cavo di alimentazione in dotazione ⑤ non ha la scatola da relè, l'antenna si può danneggiare

Opmerkingen betreffende de bedieningsaansluitingen
Het aan-luit-snoer voor de elektrische antenne (blauw) levert +12V gelijkstroom als het toestel wordt ingeschakeld
Opmerkingen betreffende de luidsprekeraansluitingen
- *Gebruik luidsprekers met een impedantie van 4 tot 8 Ohm en let op dat die het vermogen van de versterker kunnen verwerken. Zo niet kunnen de luidsprekers ernstig beschadigd raken.*
- *Verbind in geen geval de aansluitingen van de luidsprekers met het chassis van de auto en sluit de aan-luitingen van de rechter en linker luidspreker niet op elkaar aan.*
- *Probeer niet de luidsprekers parallel aan te sluiten.*
- *Sluit geen actieve luidsprekers (luidsprekers met ingebouwde versterkers) aan op de luidsprekeraansluitingen van het apparaat. Dit kan resulteren in beschadiging van de actieve luidsprekers. Op deze aansluitingen mogen uitsluitend passieve luid-sprekers worden aangesloten.*
Opgelet
Indien u een elektrische antenne heeft zonder relaiskast, kan het aansluiten van deze eenheid met het bijgeleverde netsnoer ⑤ de antenne beschadigen.

Connections of Example/Connexions de l'exemple/Anschlußbeispiel/ Collegamenti per l'esempio/Aansluitingen van voorbeeld


XR-3501MK2
Fuse (15 A)
Fusible (15 A)
Sicherung (15 A)
Fusibile (15 A)
Zekering (15 A)
from the car antenna
depuis une antenne de voiture
von Wagenantenne
da un'antenna per auto
van een auto-antenne
⑤
WARNING
Auxiliary power connectors may vary depending on the car. Be sure to check the power connection diagram sheet supplied with the unit. Improper connections may damage your car. If the supplied power connecting cord can not be used with your car, consult your nearest Sony dealer.
AVERTISSEMENT
Le connecteur d'alimentation auxiliaire peut varier suivant le type de voiture. Vérifiez le schéma du connecteur d'alimentation auxiliaire de votre voiture pour vous assurer que les connexions correspondent. Un raccordement incorrect peut occasionner des dommages à votre voiture. Si le cordon d'alimentation fourni ne peut être utilisé avec votre voiture, consultez votre revendeur Sony.
VORSICHT
Die Hilfsstromanschlüsse können je nach Fahrzeugtyp unterschiedlich sein. Sehen Sie im Hilfsstromanschlußdiagramm für Ihr Fahrzeug nach, wie die Verbindungen ordnungsgemäß vorgenommen werden müssen. Fehlerhafte Verbindungen konnen zu Schäden an Ihrem Fahrzeug führen. Wenn das mitgelieferte Netzverbindungskabel nicht für den Einsatz in Ihrem Fahrzeug geeignet ist, wenden Sie sich bitte an Ihren Sony-Händler.
ATTENZIONE
Il connettore di alimentazione ausiliare pu variare a seconda del tipo di macchina. Controllare il foglio con il diagramma del connettore di alimentazione in dotazione con l'apparecchio, connessioni non corrette potrebbero danneggiare la macchina. Se il cavo di collegamento dell'alimentazione in dotazione non pu essere utilizzato con la vostra auto, consultare il rivenditore Sony pi ù vicino.
OPGELET
De hulpvoedingsaansluitingen kunnen verschillen naargelang van de wagen. Controleer het voedingsaansluitschema dat bij dit toestel wordt geleverd. Onjuiste aansluiting kan uw wagen schade toebrengen. Indien de meegeleverde stroomaansluitingskabel voor uw wagen niet bruikbaar is, raadpleeg uw dichtstbijzijnde Sony-dealer.
to a speaker connector
vers un connecteur de haut-parleur
an Lautsprecheranschluß
a un connettore dell'altoparlante
naar een luidsprekeraansluiting
to an auxiliary power connector
vers un connecteur d'alimentation auxiliaire
an Hilfsstromanschluß
a un connettore di alimentazione ausiliare
naar een hulpvoedingsaansluiting
7 5 3 1
8 6 4 2
1 3 5 7
2 4 6 8
1 3 5 7
2 4 6 8
7 5 3 1
8 6 4 2

Pin Broche Stift Pin Pin	Colour Couleur Farbe Colore Kleur	Function Fonction Funktion Funzione Functie
4	Yellow Jaune Gelb Giallo Geel	continuous power supply alimentation continue permanente Stromversorgung alimentazione continua continu voeding
5	Blue Bleu Blau Blu Blauw	power antenna control antenne électrique elektronische Antenne antenna elettrica elektrische anten
7	Red Rouge Rot Rosso Rood	switched power supply alimentation commutée geschaltete Stromversorgung alimentazione a scatto geschakelde voeding
8	Black Noir Schwarz Nero Zwart	ground masse Masse terra aarding

Positions 1, 2, 3 and 6 do not have pins.
Les positions 1, 2, 3 et 6 ne comportent pas de broche.
An Position 1, 2, 3 und 6 befinden sich keine Stifte
Le posizioni 1, 2, 3 e 6 non hanno pin
De posities 1, 2, 3 en 6 hebben geen pins.

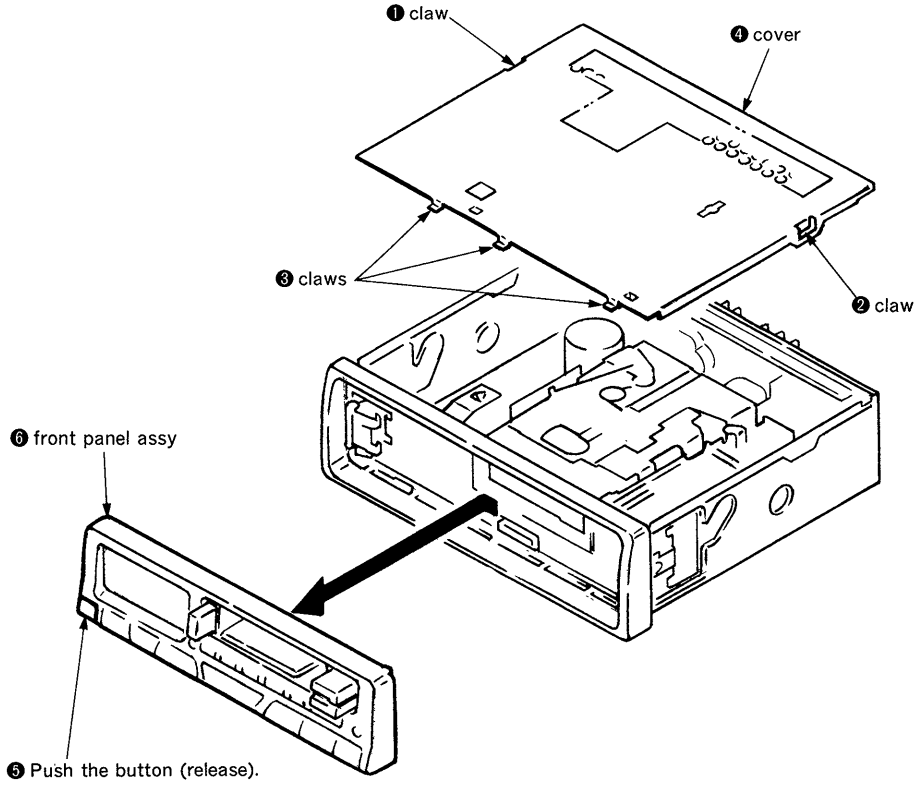
Pin Broche Stift Pin Pin	Colour Couleur Farbe Colore Kleur	Function Fonction Funktion Funzione Functie
1	Purple Mauve Violett Viola Paars	+; Speaker, Rear, Right +; haut-parleur, arrière, droit +: Lautsprecher hinten rechts Altoparlante, posteriore, destro +: Luidspreker, achter, rechts
2		–; Speaker, Rear, Right –; haut-parleur, arrière, droit –: Lautsprecher hinten rechts Altoparlante, posteriore, destro –: Luidspreker, achter, rechts
3	Gray Gris Grau Grigio Grijs	+; Speaker, Front, Right +; haut-parleur, avant, droit +: Lautsprecher vorne rechts Altoparlante, anteriore, destro +: Luidspreker, voor, rechts
4		–; Speaker, Front, Right –; haut-parleur, avant, droit –: Lautsprecher vorne rechts Altoparlante, anteriore, destro –: Luidspreker, voor, rechts
5	White Blanc Weiß Bianco Wit	+; Speaker, Front, Left +; haut-parleur, avant, gauche +: Lautsprecher vorne links Altoparlante, anteriore, sinistro +: Luidspreker, voor, links
6		–; Speaker, Front, Left –; haut-parleur, avant, gauche –: Lautsprecher vorne links Altoparlante, anteriore, sinistro –: Luidspreker, voor, links
7	Green Vert Grün Verde Groen	+; Speaker, Rear, Left +; haut-parleur, arrière, gauche +: Lautsprecher hinten links Altoparlante, posteriore, sinistro +: Luidspreker, achter, links
8		–; Speaker, Rear, Left –; haut-parleur, arrière, gauche –: Lautsprecher hinten links Altoparlante, posteriore, sinistro –: Luidspreker, achter, links

Negative polarity positions 2, 4, 6 and 8 have striped cords.
Les positions de polarité négative 2, 4, 6 et 8 sont dotées de cordons rayés.
An den negativ gepolten Positionen (2, 4, 6 und 8) befinden sich farbige Adern.
Le posizioni a polarità negativa 2, 4, 6 e 8 hanno cavi spelati
De negatieve posities 2, 4, 6 et 8 hebben gestreepte kabels

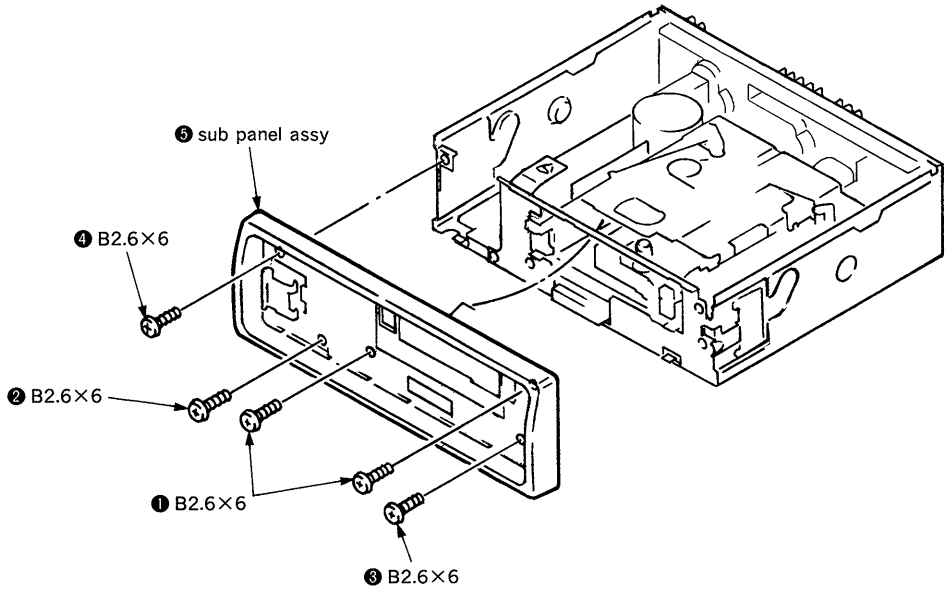
SECTION 2
DISASSEMBLY

Note : Follow the disassembly procedure in the numerical order given.

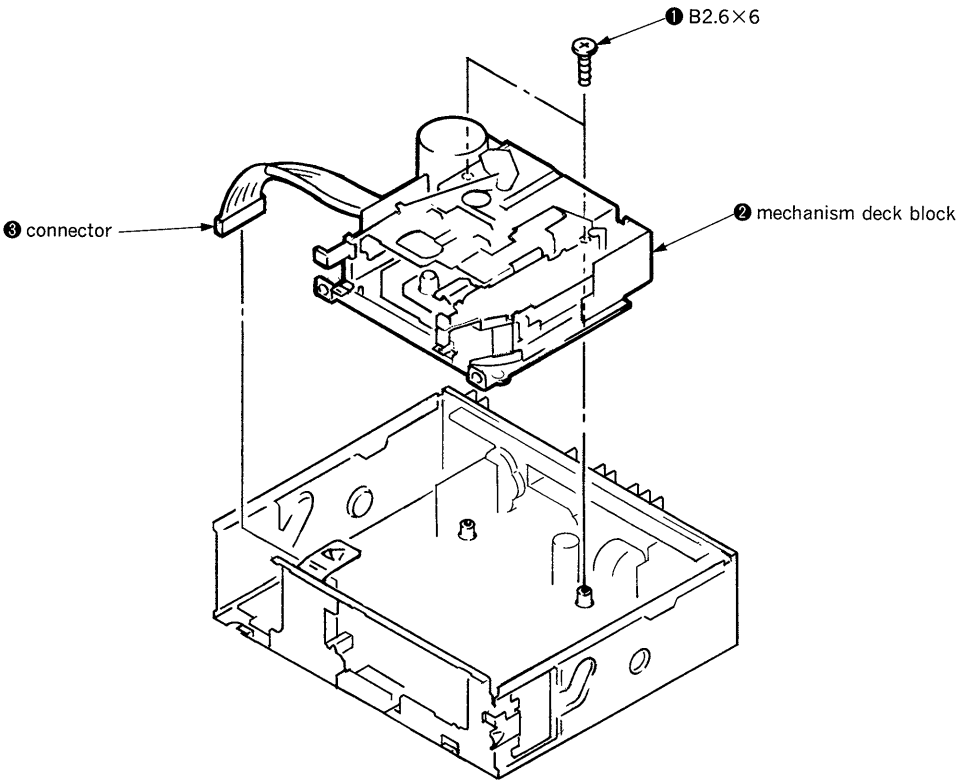
2-1. COVER



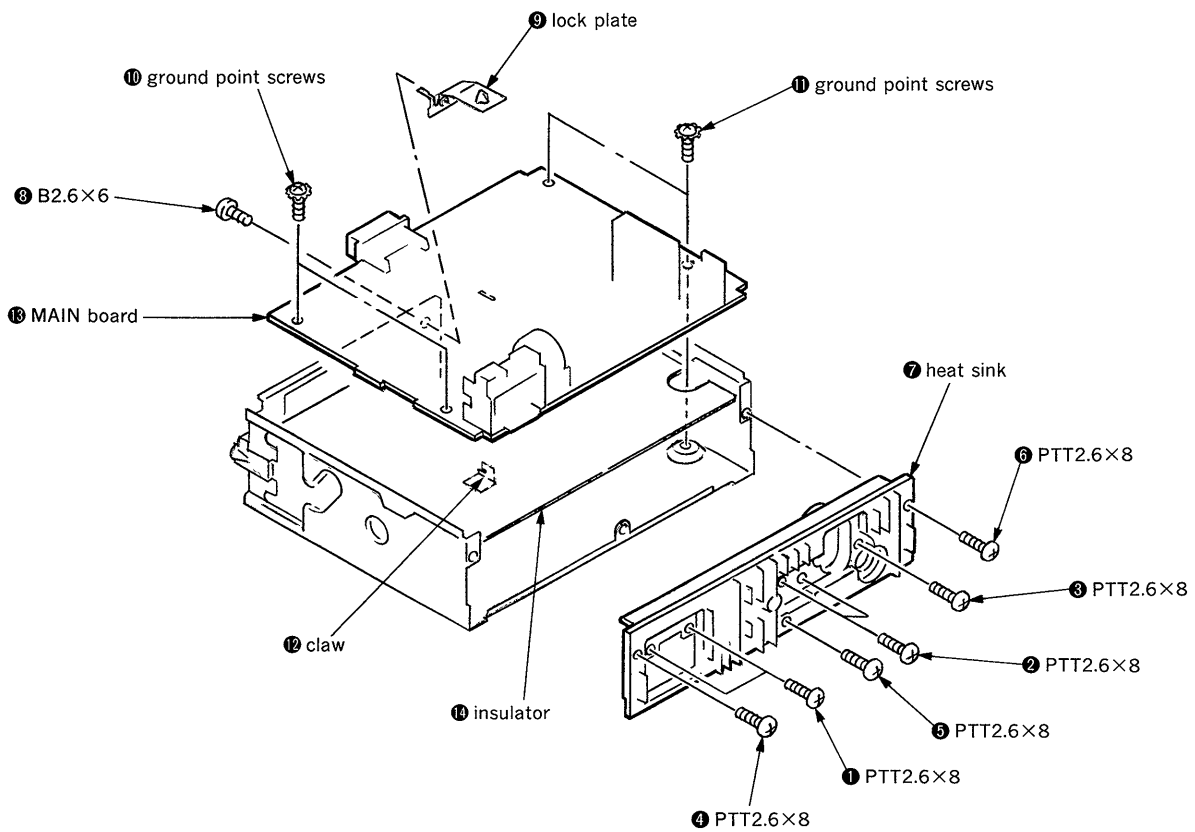
2-2. SUB PANEL ASSY



2-3. MECHANISM DECK BLOCK



2-4. MAIN BOARD



SEE ADDITIONAL INFORMATION

SECTION 3
MECHANICAL ADJUSTMENTS

PRECAUTION

1. Wipe the following components with an absorbent cotton cloth moistened with alcohol before adjustment:
   PB head　　Pinch roller
   Idler　　Rubber belt
   Capstan
2. Demagnetize the PB head using a head demagnetizer.
3. Be careful not to use a magnetized screwdriver.
4. After the adjustment is completed, lock the adjustment parts using screws.
5. Unless otherwise specified, make adjustments at the specified voltage (14.4V).

Torque Measurement

Mode	Torque Meter	Meter Reading
FWD	CQ-102C	40—75g•cm (0.56—1.04oz•inch)
FWD Back Tension		1—5g•cm (0.01—0.06oz•inch)
REV	CQ-102RC	40—75g•cm (0.56—1.04oz•inch)
REV Back Tension		1—5g•cm (0.01—0.06oz•inch)
FF, REW	CQ-201B	45—150g•cm (0.63—2.08oz•inch)

SECTION 4
ELECTRICAL ADJUSTMENTS

DECK SECTION | **0dB=0.775V**

1. The adjustments should be performed in the order given in this service manual.
2. The adjustments should be performed for both L-CH and R-CH.

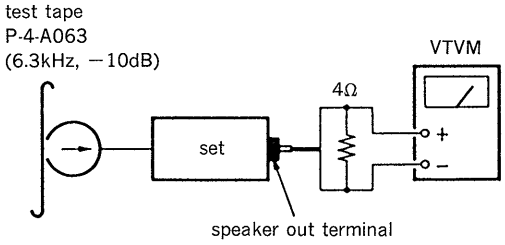
Test Tape

Type	Signal	Used for
P-4-A063	6.3kHz, −10dB	head azimuth adjustment
WS-48A	3kHz, 0dB	tape speed adjustment

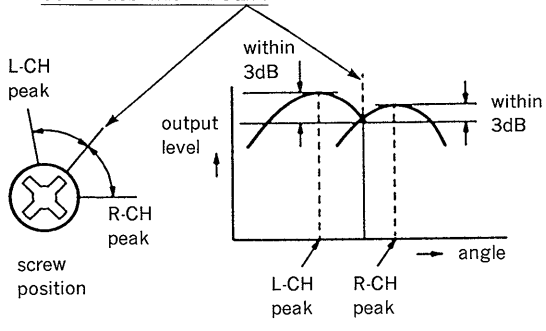
PB Head Azimuth Adjustment

Procedure:

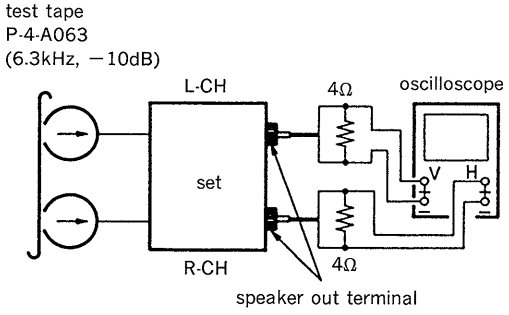
1. Mode: playback

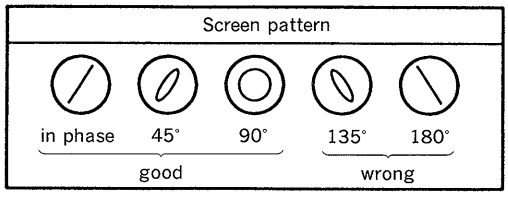


2. Turn the screw and check the output peak value. Adjust the screw so that the peak value in channels L and R coincides within 3dB.



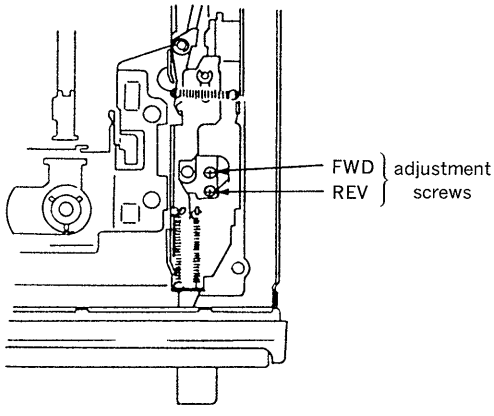
3. Check the phase in the PB mode.





4. Repeat the above adjustment for the PB REV mode.

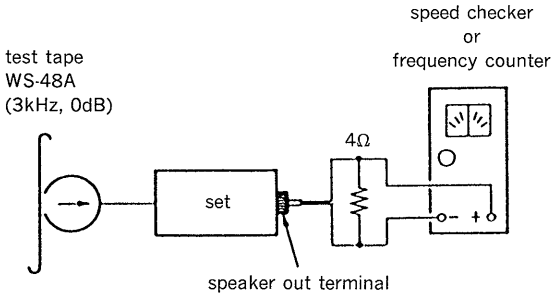
Adjustment Location:



SEE ADDITIONAL INFORMATION

Tape Speed Adjustment

Setting :



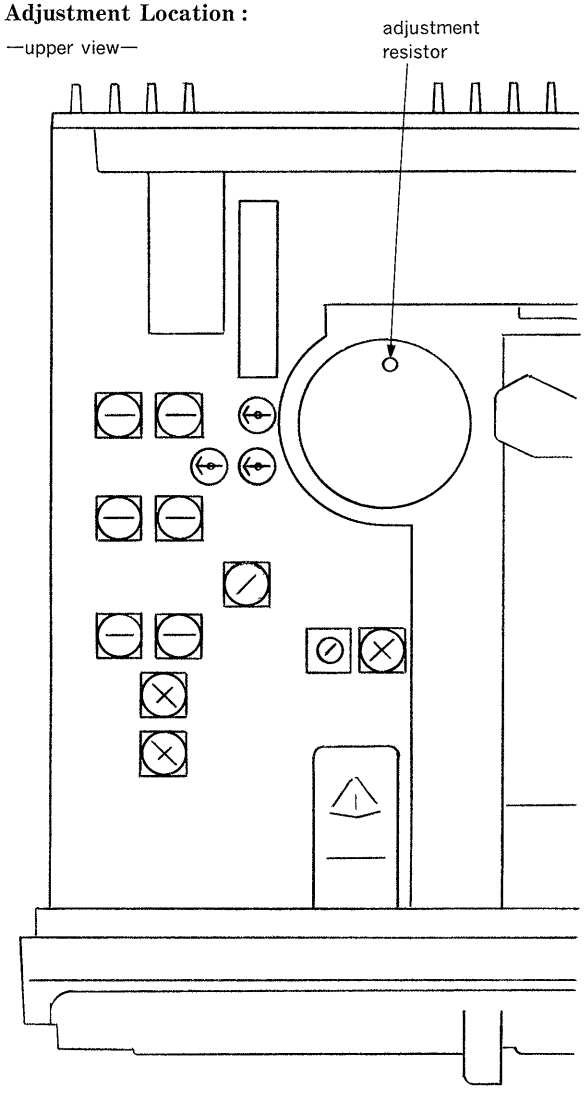
Procedure :

1. Put the set into the FWD PB mode.
2. Adjust adjustment resistor for inside capstan motor so that the reading on the speed checker or frequency counter becomes in specification.

Specification : Constant speed

Speed checker	Frequency counter
−2.0 to +3.0%	2,940 to 3,090Hz

Adjustment Location :



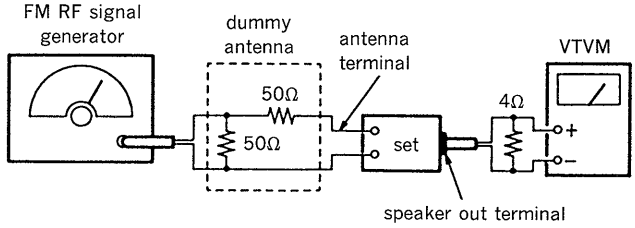
TUNER SECTION | 0dB=1μV

Cautions during repair
When the FM tuner is defective, replace it by a new one because its internal block is difficult to repair.

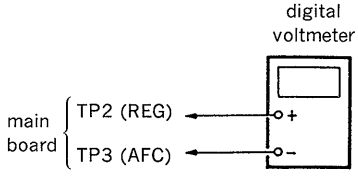
FM OV Adjustment

Setting :

TUNER button : FM



Carrier frequency : 98.0MHz
Output level : 60dB (1mV)
Mode : mono
Modulation : 1kHz, 75kHz deviation (100%)



Procedure :

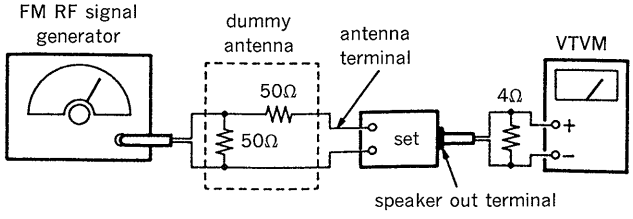
1. Tune the set to 98.0MHz.
2. Adjust T255 so that the reading on the digital voltmeter becomes 0±0.05V.

Adjustment Location : See page 14.

FM High Cut Control Adjustment

Setting :

TUNER button : FM



Carrier frequency : 98.0MHz
Output level : 60dB (1mV)
Mode : mono
Modulation : 10kHz, 75kHz deviation (100%)

Procedure :

1. Tune the set to 98.0MHz.
2. The then output level is supposing that (A) dB.
3. Adjust RV253 so that the output level is (A)−5±1dB
. then signal generator input set to 20dB.

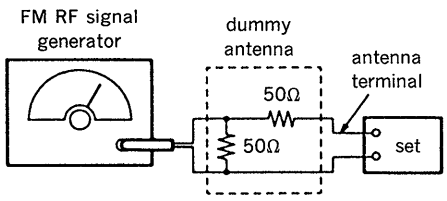
Adjustment Location : See page 14.

SEE ADDITIONAL INFORMATION

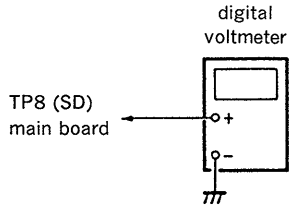
FM SEEK Stop Adjustment

Setting :

TUNER button : FM



Carrier frequency : 98.0MHz
Output level : 22dB (12.6μV)
Mode : mono
Modulation : 22.5kHz



Procedure :

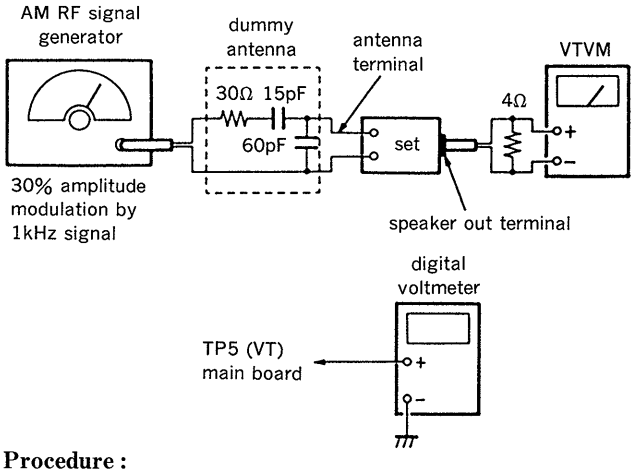
1. Short the jumper wire between TP9 and Q600 emitter (+5V). (See page 15.)
2. Adjust RV251 so that the reading on the digital voltmeter becomes 3Vdc.
3. After adjustment is completed remove the jumper wire.

Adjustment Location : See page 14 and 15.

MW VT Adjustment

Setting :

TUNER button : MW



Procedure :

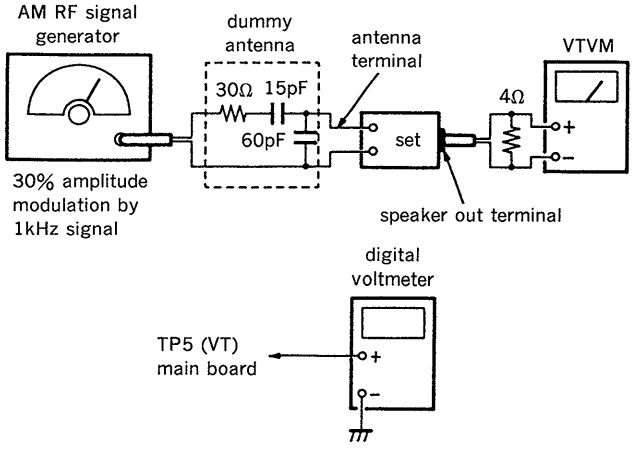
1. Tune the set to 531kHz.
2. Adjust L252 so that the reading on the digital voltmeter becomes 1.5±0.05V.
3. Tune the set to 1,602kHz.
4. Adjust CT252 so that the reading on the digital voltmeter becomes 7.4±0.1V.

Adjustment Location : See page 14 and 15.

LW VT Adjustment

Setting :

TUNER button : LW



Procedure :

1. Tune the set to 153kHz.
2. Adjust L251 so that the reading on the digital voltmeter becomes 3.1±0.1V.
3. Tune the set to 279kHz.
4. Confirm that the reading on the digital voltmeter becomes 7.0±0.3V.

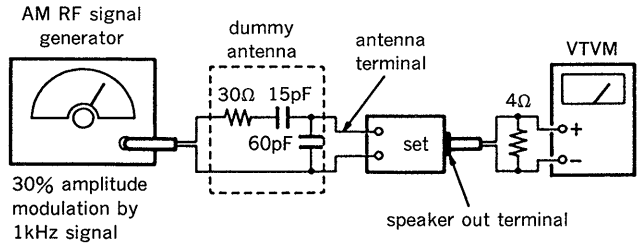
Adjustment Location : See page 14 and 15.

SEE ADDITIONAL INFORMATION

MW IF Adjustment

Setting :

TUNER button : MW



Procedure :

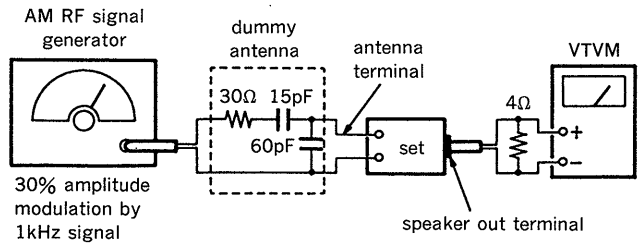
1. Tune the set to 999kHz.
2. Adjust T254 so that the reading on the VTVM becomes to maximum.

Adjustment Location : See page 14 and 15.

MW Tracking Adjustment

Setting :

TUNER button : MW



Procedure :

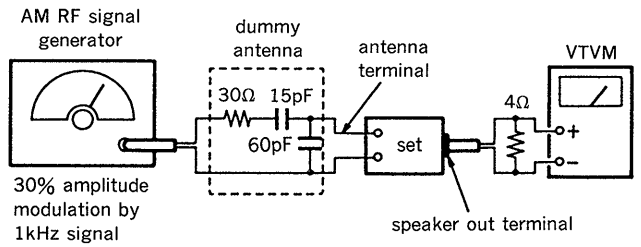
1. Tune the set to 603kHz.
2. Adjust T250 and T252 so that the reading on the VTVM becomes to maximum.
3. Tune the set to 1,404kHz.
4. Adjust CT250 and CT251 so that the reading on the VTVM becomes to maximum.

Adjustment Location : See page 14 and 15.

LW Tracking Adjustment

Setting :

TUNER button : LW



Procedure :

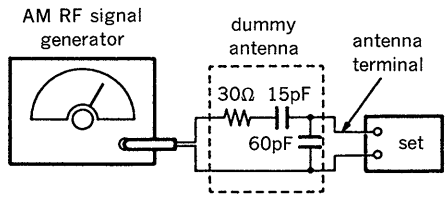
1. Tune the set to 153kHz.
2. Adjust T251 and T253 so that the reading on the VTVM becomes to maximum.

Adjustment Location : See page 14 and 15.

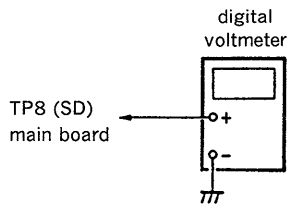
MW SEEK Stop Adjustment

Setting :

TUNER button : MW



Carrier frequency : 999kHz
Output level : 33dB (44.7μV)
Modulation : no modulation



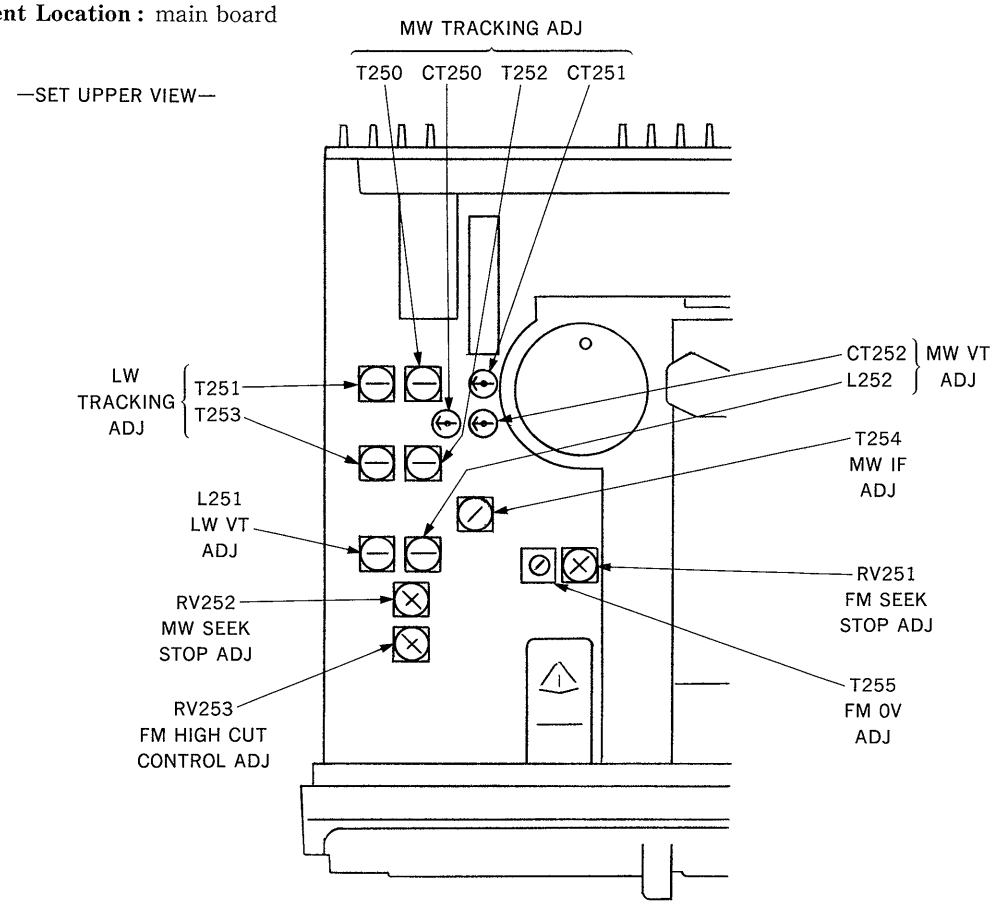
Procedure :

1. Short the jumper wire between TP9 and Q600 emitter (+5V). (See page 15.)
2. Adjust RV252 so that the reading on the digital voltmeter becomes 3Vdc.
3. After adjustment is completed remove the short wire.

Adjustment Location : See page 14 and 15.

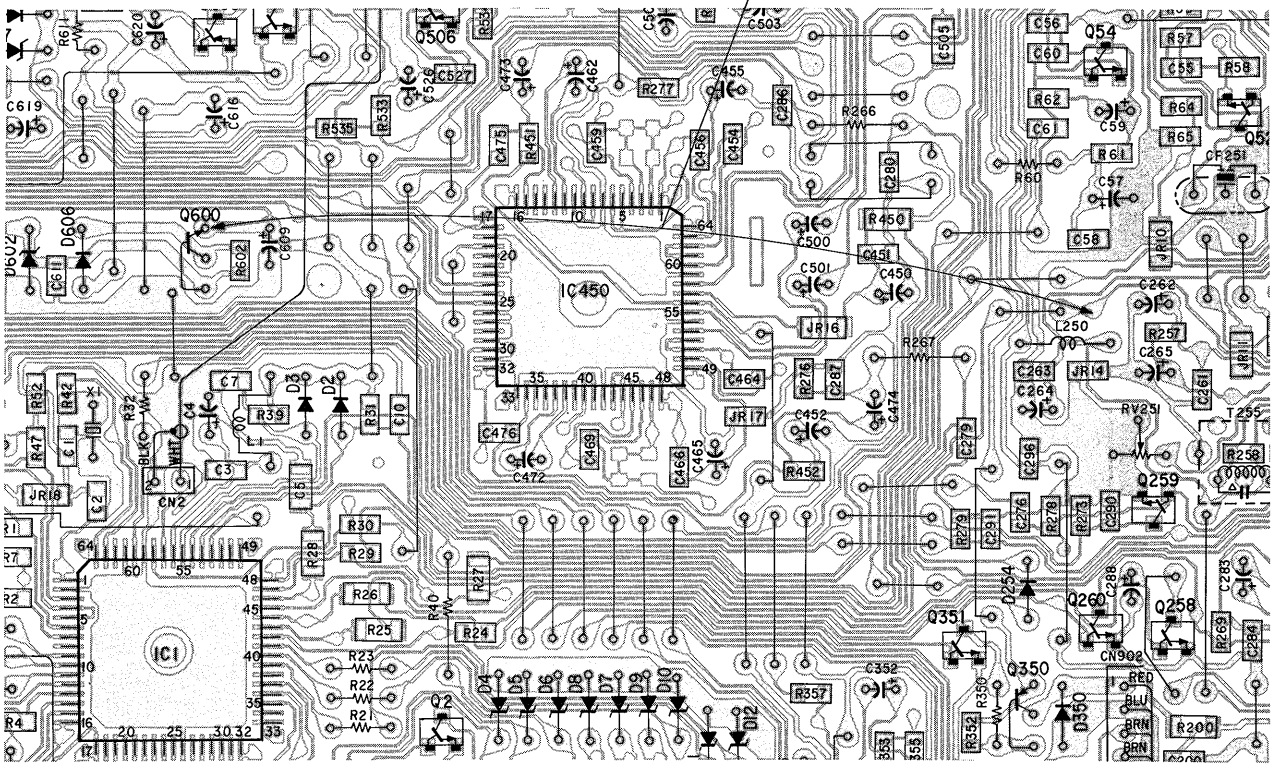
SEE ADDITIONAL INFORMATION

Adjustment Location : main board



SEE ADDITIONAL INFORMATION

Measurement Point Location : main board (conductor side)



SECTION 5
DIAGRAMS

5-1. IC PIN DESCRIPTION

• IC1 LC7233N-9206 (System Control)

Pin No.	Pin Name	I/O	Pin Description
1	X IN	I	Connect to crystal.(4.5MHz)
2	—	—	Connect to GND.
3	$\overline{\text{ILL IN}}$	I	At ILL IN : Low input
4	AM SD	I	At with AM SD : High input
5	FM SD	I	At with FM SD : High input
6	$\overline{\text{STEREO}}$	I	At STEREO : Low input
7	MOTOR	O	Reel/capstan motor control terminal. At MOTOR-ON : High output
8	—	—	Not used.
9	BEEP	O	For piezoelectric buzzer output terminal
10	—	—	Not used.
11	ILL ON	O	At ACC-ON : High output,at ACC-OFF : Low output
12	N/R	I	NORMAL/$\overline{\text{REVERSE}}$ input terminal
13	FF/REW	I	At TAPE : High input, at RADIO : Low input
14	TAPE IN	I	At TAPE IN : Low input
15	K1	I	Diode matrix input (XR-3208MK2/3509 only)
16	K0	I	Diode matrix input
17, 18	T2, T1	—	Not used.
19	T0	O	Diode matrix output (XR-3208MK2/3509 only)
20	VOL CE	O	Chip Enable output terminal to ELECTRONIC VOLUME IC (IC450).
21	VOL DI	O	Data output terminal to ELECTRONIC VOLUME IC (IC450).
22	VOL CL	O	Clock output terminal to ELECTRONIC VOLUME IC (IC450).
23	MUTE REQ	I	At ACC-OFF : High input
24	PANEL IN	I	At Detachable IN : Low input,at Detachable OUT : High input
25	BAND KEY	I	At TUNER-ON : Low input
26	—	I	Connect to GND.
27	MUTE	O	Audio mute output terminal
28	—	—	Not used.
29	AMP MUTE	O	Power amplifier mute output terminal
30—34	—	—	Not used.
35—37	KS2—KS0	O	Key matrix output
38	—	—	Not used.
39	LCD DATA	O	Data output terminal to LCD drive IC (IC900).
40	LCD CLK	O	Clock output terminal to LCD drive IC (IC900).
41	LCD CE	O	Chip Enable output terminal to LCD drive IC (IC900).
42	AM	O	At AM : High output
43	MONO	O	At Monaural : High output
44	SEEK	O	At SEEK : Low output
45	MW/LW	O	At MW : High output,at LW : Low output
46	LOCAL/DX	O	At STEREO LOCAL : High output, at STEREO DX or MONO DX : Low output
47	FM ON	O	At FM : High output, at AM : Low output
48	TUNER ON	—	Not used.
49—51	—	—	Not used.
52	CE	I	Chip Enable input terminal
53	KEY IN	I	Key matrix signal input terminal

Pin No.	Pin Name	I/O	Pin Description
54	IF IN	I	FM/AM IF input terminal
55	BU CHECK	I	Back-up voltage detection terminal
56	VDD	—	Power supply terminal (+5V)
57	FM IN	I	FM local OSC input terminal
58	AM IN	I	AM local OSC input terminal
59	GND	—	GND
60	EO	O	Phase comparator output terminal
61	LPF IN	—	Connect to GND.
62	LPF OUT	—	Not used.
63	—	—	Connect to VDD (+5V).
64	X OUT	O	Connect to crystal.(4.5MHz)

SEE ADDITIONAL INFORMATION

5-2. PRINTED WIRING BOARDS—MAIN SECTION—

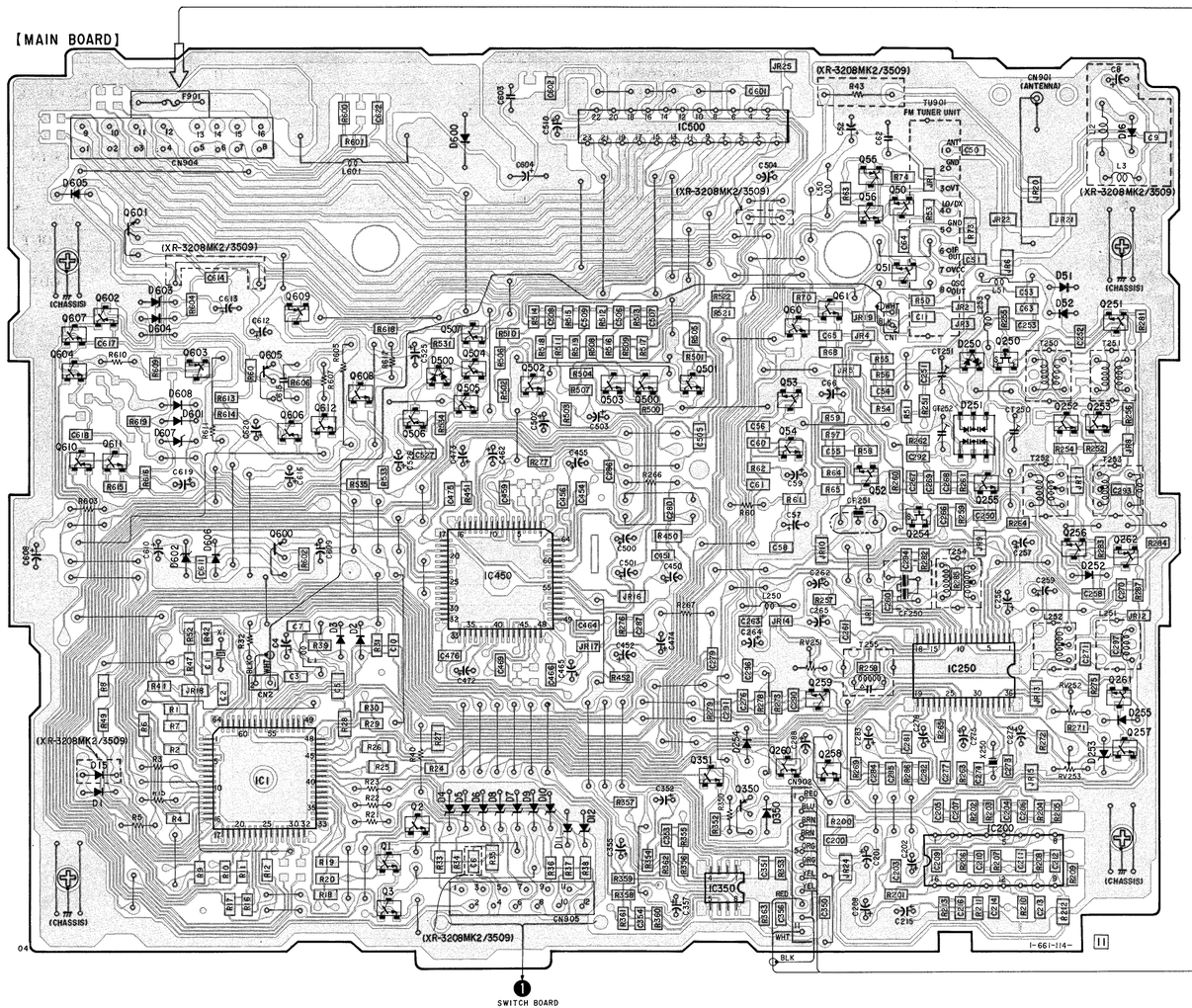
● **Semiconductor Location**

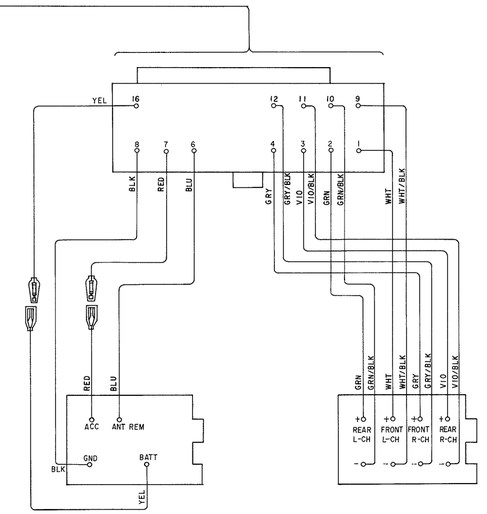
Ref. No.	Location	Ref. No.	Location
D1	H-2	Q51	C-9
D2	F-4	Q52	E-8
D3	F-4	Q53	D-8
D4	H-5	Q54	E-8
D5	H-5	Q55	B-8
D6	H-5	Q56	C-8
D7	H-5	Q60	D-8
D8	H-5	Q61	C-8
D9	H-5	Q250	D-10
D10	H-6	Q251	D-11
D11	H-6	Q252	E-10
D12	H-6	Q253	D-11
(D15)	H-2	Q254	E-9
(D16)	B-11	Q255	E-10
D51	C-10	Q256	F-10
D52	D-10	Q257	G-11
D250	D-9	Q258	H-8
D251	E-9	Q259	G-8
D252	F-10	Q260	H-8
D253	H-11	Q261	G-11
D254	G-7	Q262	F-11
D255	G-11	Q350	H-7
D350	H-8	Q351	H-7
D500	D-5	Q500	D-6
D600	B-5	Q501	D-7
D601	D-2	Q502	D-5
D602	F-2	Q503	D-6
D603	C-2	Q504	D-5
D604	D-2	Q505	D-5
D605	B-1	Q506	E-4
D606	F-3	Q507	D-5
D607	E-2	Q600	F-3
D608	D-2	Q601	C-2
		Q602	D-2
IC1	H-3	Q603	D-3
IC200	H-10	Q604	D-1
IC250	G-9	Q605	D-3
IC350	I-7	Q606	E-3
IC450	F-5	Q607	D-1
IC500	B-7	Q608	D-4
		Q609	D-3
Q1	H-4	Q610	E-1
Q2	H-4	Q611	E-2
Q3	I-4	Q612	D-4
Q50	C-9		

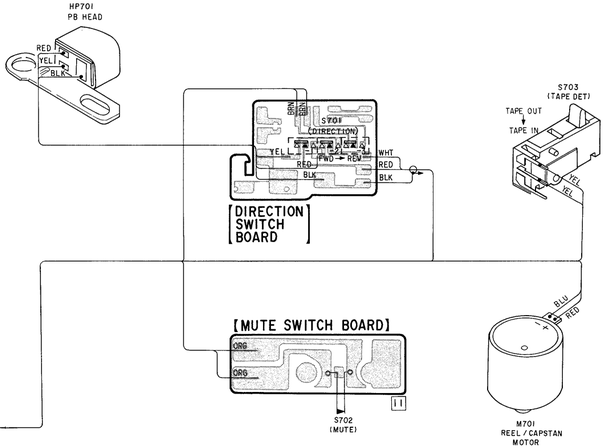
( ): XR-3208MK2/3509 only

Note :

- ○— : parts extracted from the component side.
- —— : parts extracted from the conductor side.
- ▨ : Pattern on the side which is seen.

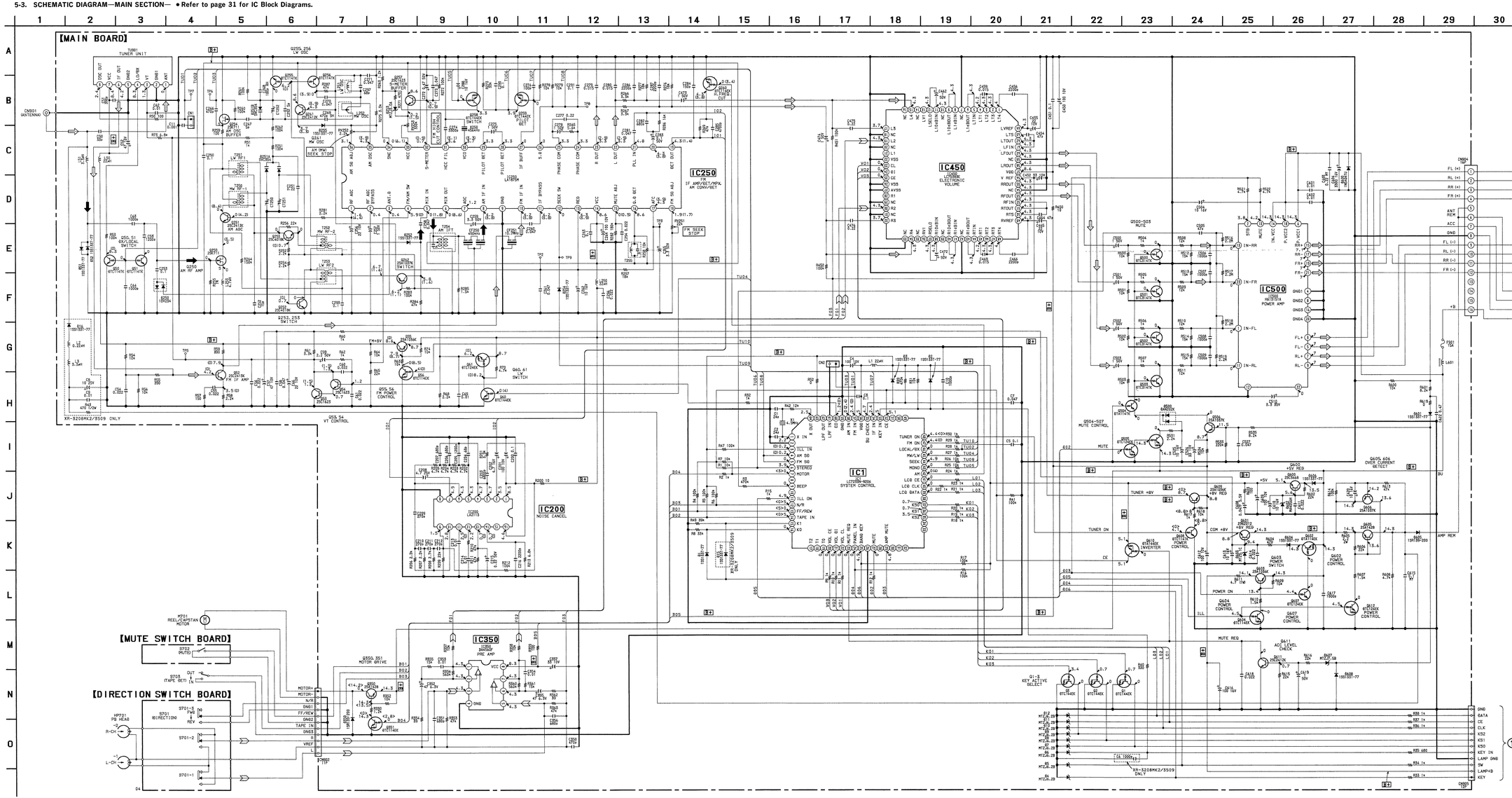






SEE ADDITIONAL INFORMATION

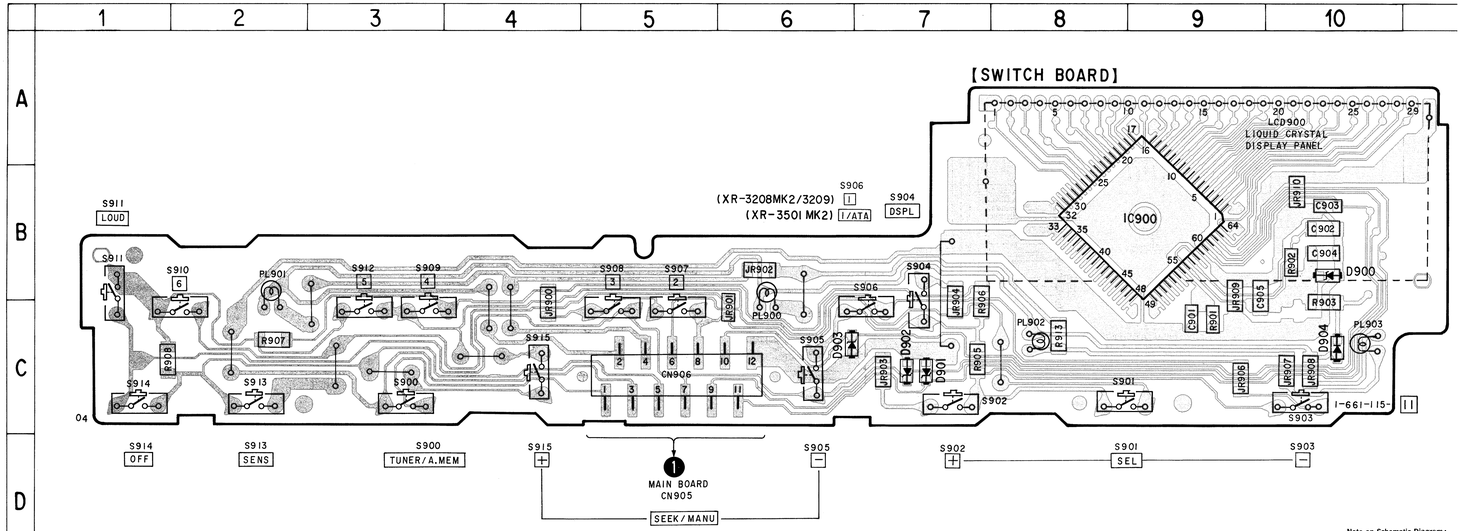
5-3. SCHEMATIC DIAGRAM—MAIN SECTION— • Refer to page 31 for IC Block Diagrams.



Note :

- All capacitors are in μF unless otherwise noted. pF : μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- △ : internal component.
- B+ : B+ Line
- ▭ : adjustment for repair.
- Power voltage is dc 14.4V and fed with regulated dc power supply from BATT and ACC terminals.
- Voltage is dc with respect to ground under no-signal (detuned) conditions.
- no mark: FM
  ( ): MW
  < >: PB
- Voltages are taken with a VOM (Input Impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- Signal path.
  ⇨ : FM
  ➡ : MW
  ⇨ : PB

5-4. PRINTED WIRING BOARD—PANEL SECTION—



● Semiconductor Location

Ref. No.	Location
D900	B-10
D901	C-7
D902	C-7
D903	C-6
D904	C-10
IC900	B-9

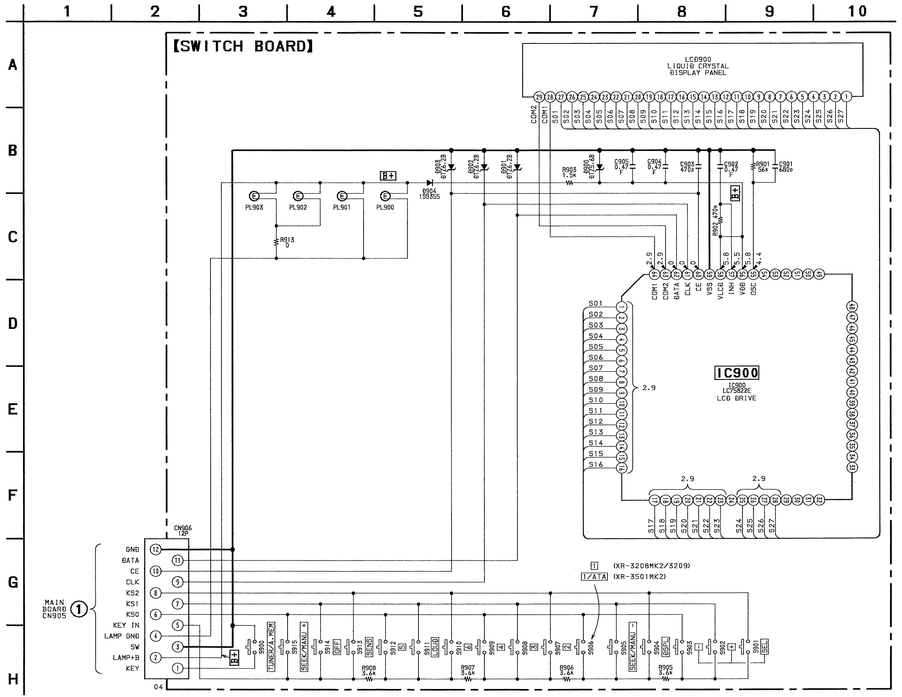
Note on Printed Wiring Board:

- ▩ : Pattern on the side which is seen.

Note on Schematic Diagram:

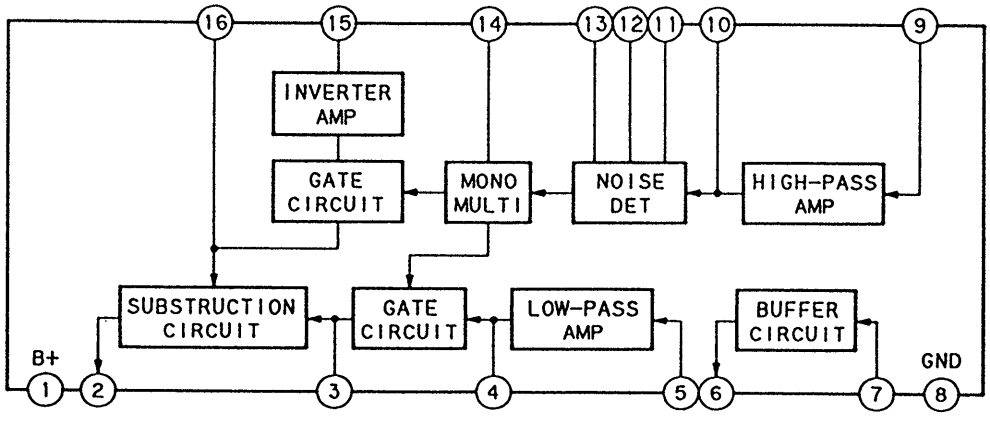
- All capacitors are in μF unless otherwise noted. pF : μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- 【★】 : B+ Line
- Power voltage is dc 14.4V and fed with regulated dc power supply from BATT and ACC terminals.
- Voltage is dc with respect to ground under no-signal (detuned) conditions.
- no mark: FM
- Voltages are taken with a VOM (Input Impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.

5-5. SCHEMATIC DIAGRAM—PANEL SECTION—

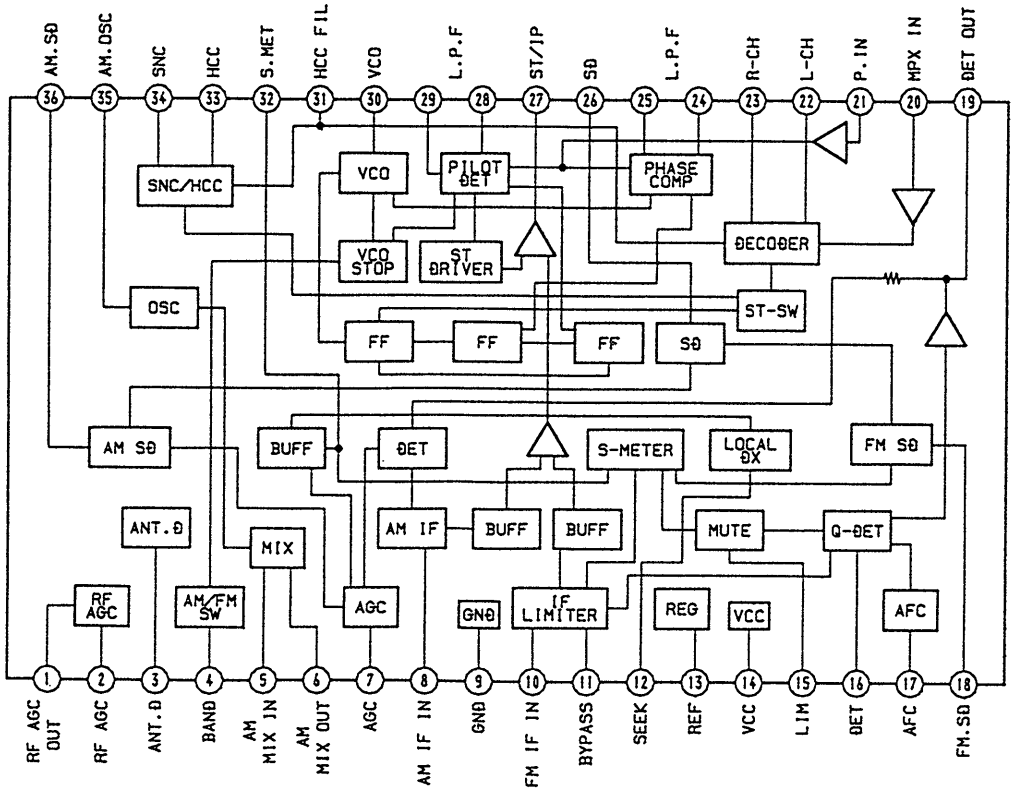


• **IC Block Diagrams**

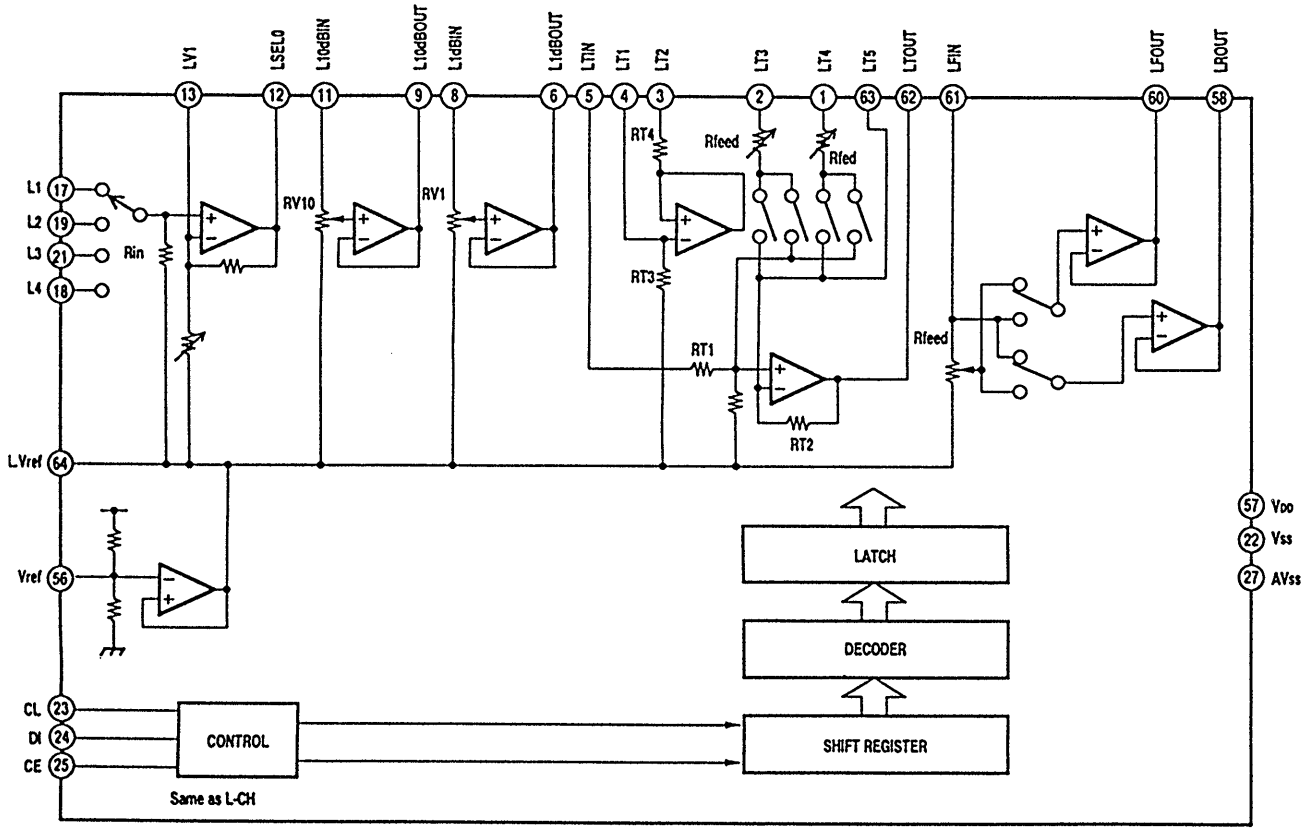
IC200 LA2113



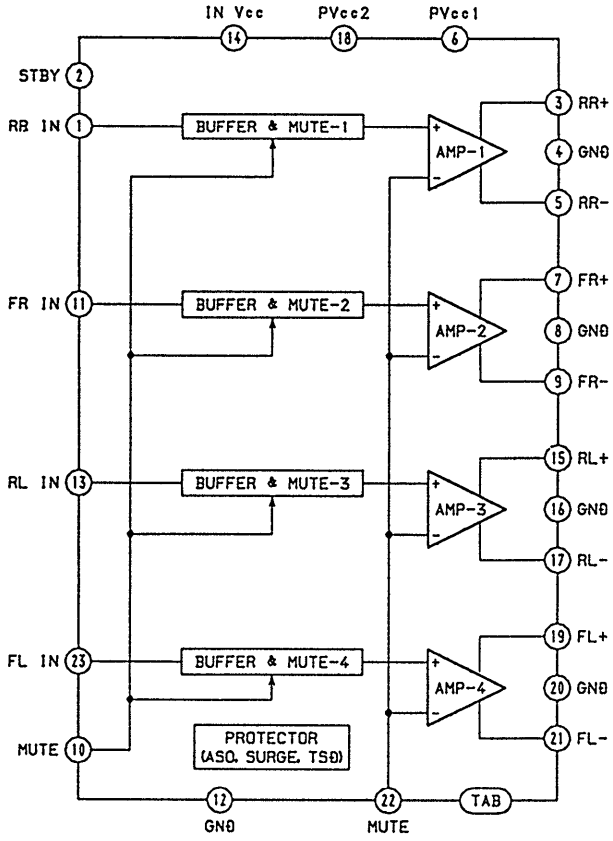
IC250 LA1875M



IC450 LC75383E



IC500 HA13151A

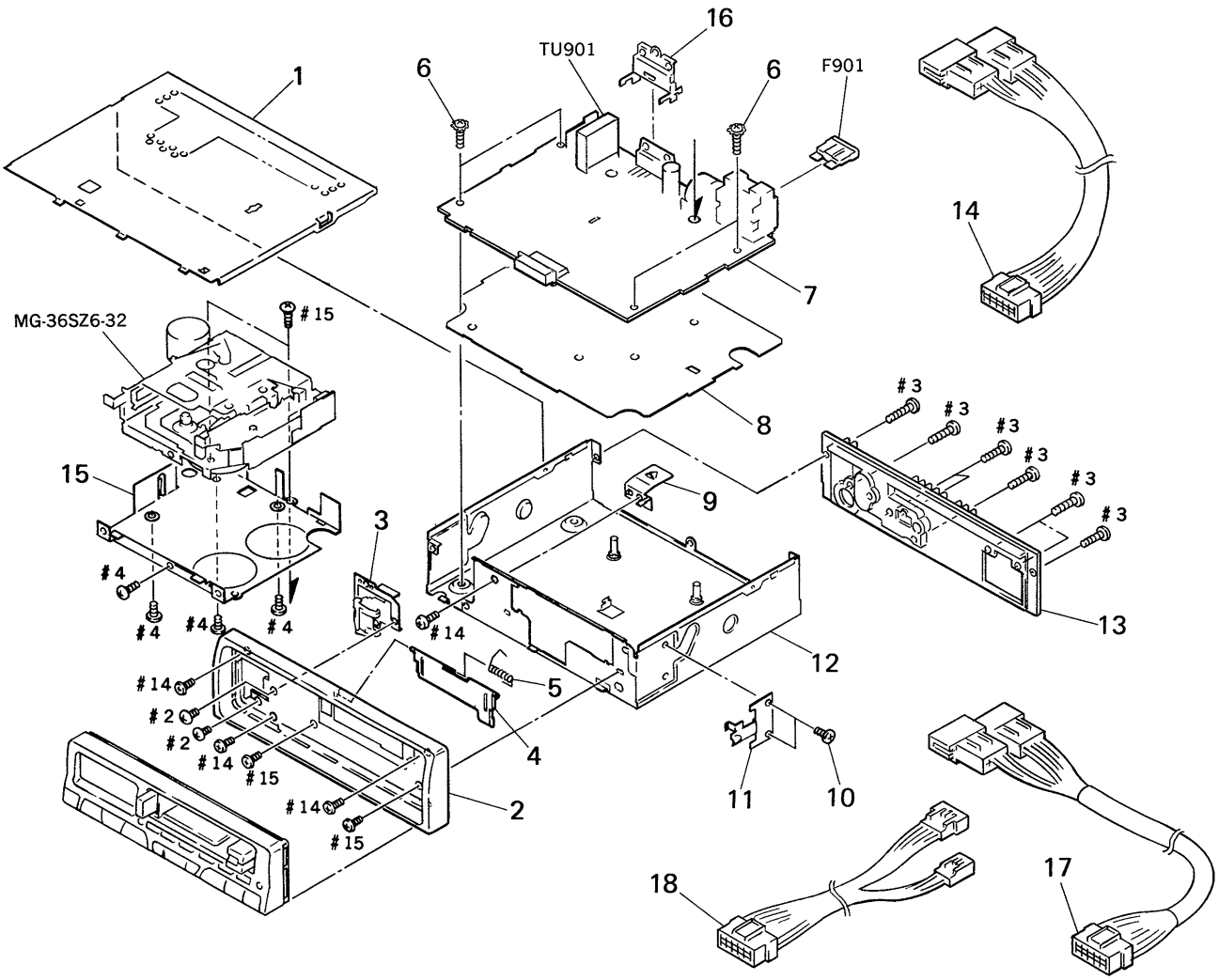


SECTION 6
EXPLODED VIEWS

NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Color Indication of Appearance Parts
  Example :
  KNOB, BALANCE (WHITE)... (RED)
  ↑ ↑
  Parts Color Cabinet's Color
- Hardware (# mark) list and accessories and packing materials are given in the last of this parts list.

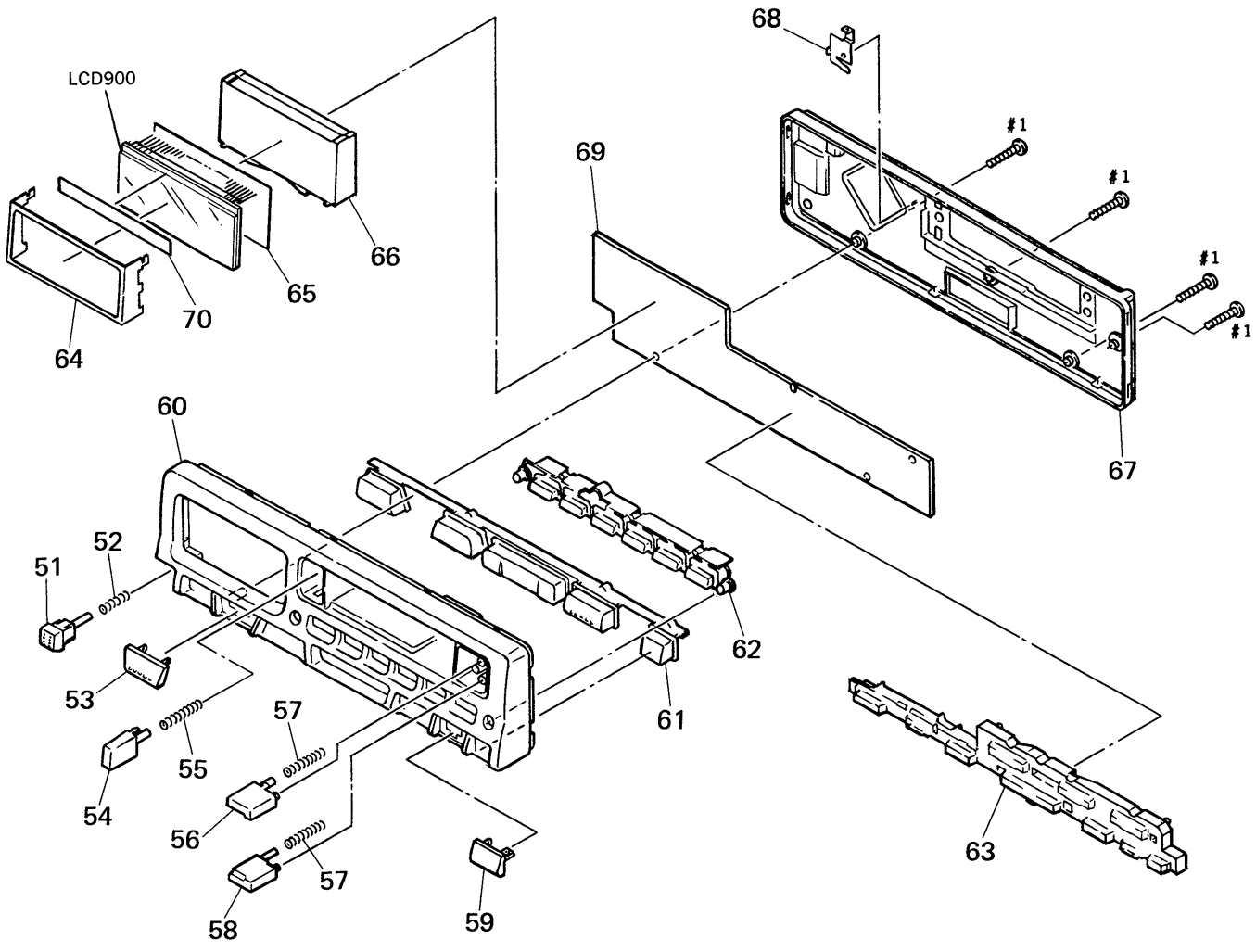
6-1. CHASSIS SECTION



Ref. No.	Part No.	Description	Remark
* 1	3-922-517-01	COVER	
2	3-934-820-01	PANEL, SUB	
3	X-3367-636-1	LOCK ASSY	
4	3-924-404-11	DOOR, CASSETTE	
5	3-377-892-01	SPRING (C DOOR), TORSION	
6	3-376-464-11	SCREW (+PTT 2.6X6), GROUND POINT	
* 7	A-3294-052-A	MAIN BOARD, COMPLETE (XR-3501MK2)	
* 7	A-3294-059-A	MAIN BOARD, COMPLETE (XR-3208MK2/3509)	
* 8	3-922-512-01	INSULATOR	
* 9	3-909-089-01	PLATE, LOCK	
10	3-344-561-21	SCREW (M4X4)	

Ref. No.	Part No.	Description	Remark
* 11	3-909-090-01	PLATE (R), LOCK	
* 12	X-3369-999-1	CHASSIS ASSY	
* 13	3-935-370-01	SINK, HEAT	
14	1-776-527-11	CORD (WITH CONNECTOR) (ISO)	(XR-3501MK2)
* 15	3-924-507-01	BRACKET (MD)	
* 16	3-931-260-01	BRACKET (IC)	
17	1-776-208-21	CORD (WITH CONNECTOR) (VAG-UK)	(XR-3509)
18	1-777-184-11	CORD (WITH CONNECTOR) (XR-3208MK2)	
F901	1-553-331-11	FUSE (BLADE TYPE) (AUTO FUSE) 15A	
TU901	1-693-285-11	TUNER, FM	

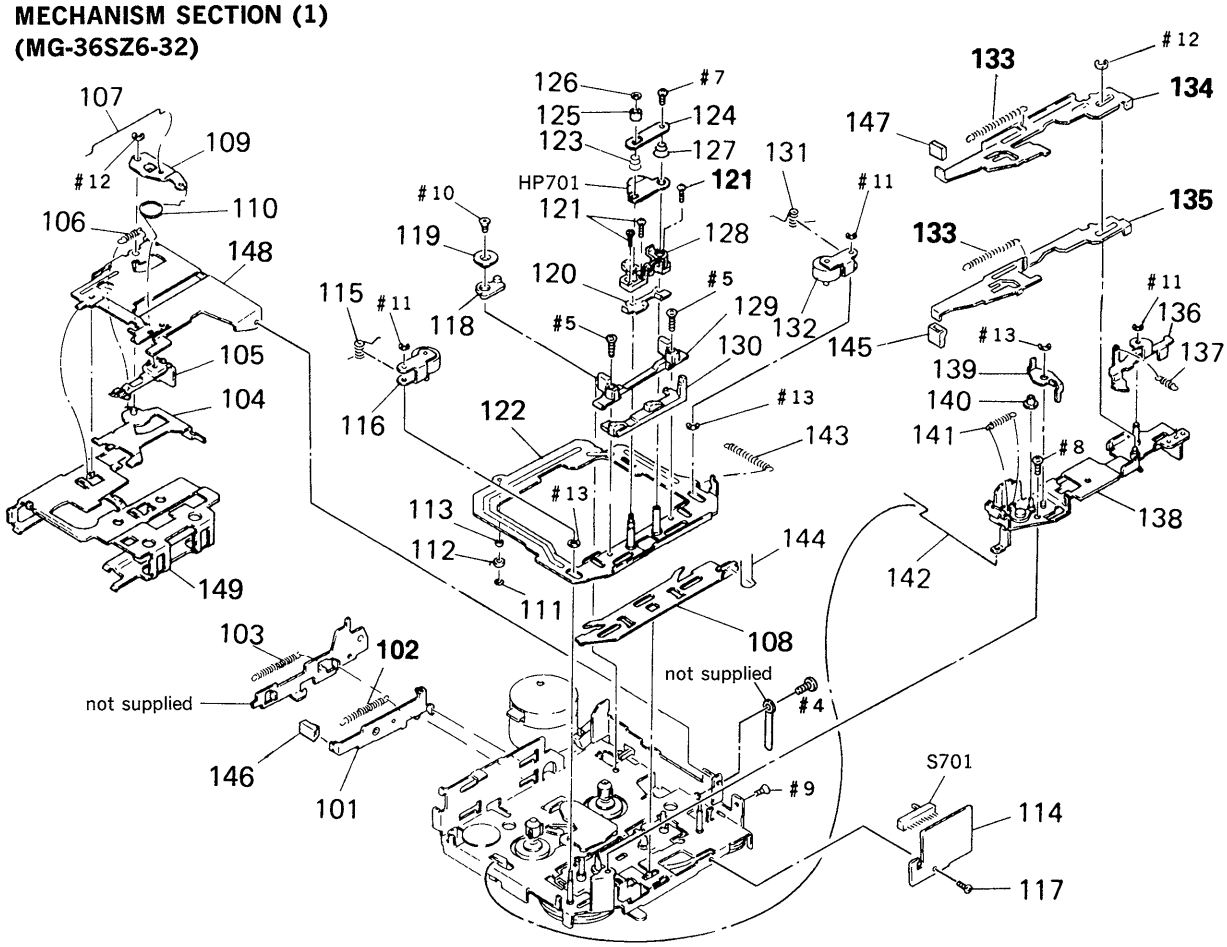
6-2. FRONT PANEL SECTION



Ref. No.	Part No.	Description	Remark
51	3-922-508-01	BUTTON (RELEASE)	
52	3-375-372-01	SPRING (RELEASE)	
53	3-922-502-01	BUTTON (SEL)	
54	3-922-505-01	BUTTON (EJECT)	
55	3-922-513-01	SPRING (EJECT), COMPRESSION	
56	3-922-506-01	BUTTON (FF)	
57	3-922-514-01	SPRING (F/R), COMPRESSION	
58	3-922-507-01	BUTTON (REW)	
59	3-922-503-01	BUTTON (SENS)	
60	3-933-013-01	PANEL, FRONT (XR-3501MK2)	
60	3-933-528-01	PANEL, FRONT (XR-3509)	
60	3-935-196-01	PANEL, FRONT (XR-3208MK2)	

Ref. No.	Part No.	Description	Remark
61	3-922-504-01	BUTTON (OFF)	
62	3-922-501-01	BUTTON (1-6)	
* 63	3-922-510-01	PLATE (BUTTON), LIGHT GUIDE	
* 64	3-922-522-01	PLATE (LCD), GROUND	
* 65	3-934-818-01	REFLECTOR	
* 66	3-922-509-01	PLATE (LCD), LIGHT GUIDE	
67	3-934-864-01	PANEL, FRONT BACK	
* 68	3-922-523-01	PLATE (F/S), GROUND	
* 69	1-661-115-11	SWITCH BOARD	
* 70	3-934-819-01	INSULATOR	
LCD900	1-801-228-11	DISPLAY PANEL, LIQUID CRYSTAL	

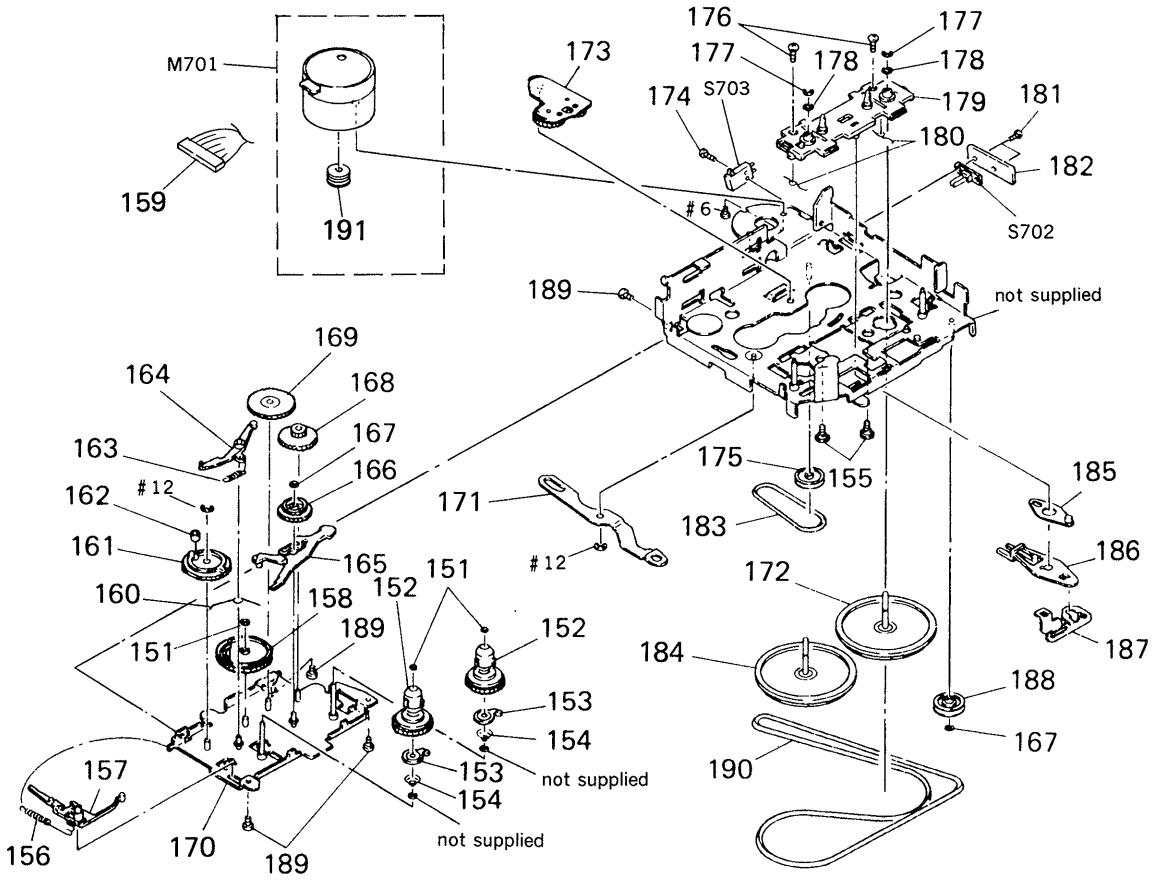
6-3. MECHANISM SECTION (1)
(MG-36SZ6-32)



Ref. No.	Part No.	Description	Remark
* 101	3-379-144-01	LEVER (S), EJECT	
102	3-392-950-01	SPRING	
103	3-392-951-01	SPRING	
* 104	3-392-921-01	LOCK ASSY, EJECT CAM	
105	3-392-972-01	HOOKER, TAPE	
106	3-392-953-01	SPRING	
107	3-392-969-01	LINK, RETURN	
* 108	3-392-919-01	ARM ASSY, F, R SELECTION	
* 109	3-392-932-01	PLATE, CENTER	
110	3-392-961-01	SPRING (B)	
111	3-570-615-00	POLY-WASHER (DIA. 1. 2)	
112	3-392-945-01	ROLLER (A), H. P	
113	3-392-942-01	ROLLER (B), H. P	
114	3-392-970-01	CHASSIS, SWITCH (DIRECTION SWITCH BOARD)	
115	3-392-958-01	SPRING (R)	
116	3-375-378-01	ARM (R) ASSY, PINCH	
* 117	4-908-792-11	SCREW (B2)	
118	3-372-244-01	ARM (N), MUTE	
* 119	3-397-427-01	COLLAR, MUTE ARM	
120	3-377-908-01	SHIM (X), ADJUSTOR	
121	3-375-379-01	SCREW, AZIMUTH	
* 122	3-392-975-05	PLATE ASSY (S), HEAD	
123	3-392-956-01	SPRING (A)	
* 124	3-392-930-01	RETAINER, SPRING	
125	3-392-943-01	ROLLER, FF	
126	3-676-387-00	POLY-SLIDER (DIA. 1. 6)	

Ref. No.	Part No.	Description	Remark
127	3-392-955-01	SPRING (A)	
* 128	3-379-142-01	ARM (B), ADJUSTOR	
129	3-392-984-02	GUIDE, TAPE	
130	3-377-909-02	LINK (X), ADJUSTOR	
131	3-392-957-01	SPRING (F)	
132	3-375-377-01	ARM (F) ASSY, PINCH	
133	3-392-948-01	SPRING	
* 134	3-379-145-01	LEVER (S), FF	
* 135	3-379-146-01	LEVER (S), REW	
* 136	3-392-935-01	ARM, LOCK	
137	3-392-917-01	SPRING	
* 138	3-372-242-01	BRACKET ASSY (D), LEVER	
* 139	3-392-933-01	LEVER (B), CHANGE	
140	3-392-994-01	ROLLER, PROGRAM	
141	3-392-954-01	SPRING	
142	3-372-243-01	LINK (B), SELECTOR	
143	3-392-952-01	SPRING	
144	3-392-962-01	SPRING	
* 145	3-379-139-01	BUTTON, REW	
* 146	3-379-140-01	BUTTON, EJECT	
* 147	3-379-141-01	BUTTON, FF	
148	3-375-383-01	HANGER (X), CASSETTE	
149	3-375-384-01	HOLDER (X), CASSETTE	
HP701	1-543-717-11	HEAD, MAGNETIC (PLAYBACK)	
S701	1-692-502-11	SWITCH, SLIDE (DIRECTION)	

6-4. MECHANISM SECTION (2)
(MG-36SZ6-32)



Ref. No.	Part No.	Description	Remark
151	3-676-387-00	POLY-SLIDER (DIA. 1.6)	
152	3-376-196-01	SPINDLE ASSY (S), REEL	
153	3-375-380-01	CAM ASSY, DETECTION	
154	3-370-619-01	SPRING, BACK TENSION	
155	3-392-918-01	SCREW, EJECT HOOK	
156	3-392-959-01	SPRING	
157	3-392-985-02	RATCHET	
158	3-392-990-01	GEAR, DETECTION	
159	3-387-912-01	CONNECTOR ASSY, 11P	
160	3-392-960-01	SPRING	
161	3-392-987-01	GEAR, SELECTOR	
162	3-392-944-01	COLLAR (SELECTOR GEAR)	
163	3-375-131-01	SPRING, GEAR LOCK ARM	
164	3-392-989-02	ARM, GEAR LOCK	
165	3-392-986-01	ARM, SENSOR	
166	3-392-915-01	GEAR, IDLE	
167	3-570-615-00	POLY-WASHER (DIA. 1.2)	
168	3-392-936-01	GEAR (A)	
169	3-392-937-01	GEAR (B)	
* 170	3-392-976-01	BASE ASSY, REEL	
* 171	3-392-979-01	LEVER, REVERSE	
172	3-392-926-02	FLYWHEEL ASSY (BF)	

Ref. No.	Part No.	Description	Remark
173	3-392-916-01	ARM ASSY, TU GEAR	
174	3-318-203-11	SCREW (B1.7X6), TAPPING	
175	3-392-938-01	GEAR, PULLY	
176	3-318-204-81	SCREW (M1.7X3), TAPPING	
177	3-590-768-00	RING (A), E	
178	3-701-437-11	POLY-SLIDER (A)	
* 179	3-375-381-01	BRACKET ASSY (X), CM	
180	3-392-963-01	SPRING (R)	
181	3-318-204-91	SCREW (M1.7X4), TAPPING	
182	3-375-376-01	MUTE (PWB) (MUTE SWITCH BOARD)	
183	3-375-375-02	BELT (C), SUB	
184	3-392-995-02	FLYWHEEL ASSY (BR)	
* 185	3-392-925-01	ARM (A) ASSY, F.R	
* 186	3-392-939-01	ARM, FF	
* 187	3-392-934-01	ARM (B), F.R	
188	3-392-941-01	PULLEY (A), IDLE	
* 189	4-908-792-11	SCREW (B2)	
190	3-392-967-01	BELT, MAIN	
* 191	3-392-913-01	PULLEY, MOTOR	
M701	X-3364-496-1	MOTOR ASSY (REEL/CAPSTAN)	
S702	1-692-065-11	SWITCH, LEAF (MUTE)	
S703	1-554-790-21	SWITCH, POWER (TAPE DET)	

SECTION 7
ELECTRICAL PARTS LIST

MAIN

NOTE:
- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms.
  METAL:Metal-film resistor.
  METAL OXIDE: Metal oxide-film resistor.
  F:nonflammable
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u:μ, for example:
  uA ..: μA.. uPA..: μPA..
  uPB..: μPB.. uPC..: μPC.. uPD..: μPD..
- CAPACITORS
  uF: μF
- COILS
  uH: μH

When indicating parts by reference number, please include the board.

Ref.No.	Part No.	Description			Remark
*	A-3294-052-A	MAIN BOARD, COMPLETE (XR-3501MK2)			
*	A-3294-059-A	MAIN BOARD, COMPLETE (XR-3208MK2/3509)			
		**********			
*	3-931-260-01	BRACKET (IC)			
		< CAPACITOR >			
C1	1-163-102-00	CERAMIC CHIP	24PF	5%	50V
C2	1-163-102-00	CERAMIC CHIP	24PF	5%	50V
C3	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C4	1-124-584-00	ELECT	100uF	20%	10V
C5	1-163-077-00	CERAMIC CHIP	0.1uF	10%	25V
C6	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
					(XR-3208MK2/3509)
C7	1-104-760-11	CERAMIC CHIP	0.047uF	10%	50V
C8	1-126-569-11	ELECT	10uF	20%	25V
					(XR-3208MK2/3509)
C9	1-163-031-11	CERAMIC CHIP	0.01uF		50V
					(XR-3208MK2/3509)
C10	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C11	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C50	1-163-239-11	CERAMIC CHIP	33PF	5%	50V
C51	1-163-131-00	CERAMIC CHIP	390PF	5%	50V
C52	1-124-589-11	ELECT	47uF	20%	16V
C53	1-163-010-11	CERAMIC CHIP	0.0012uF	10%	50V
C54-56					
	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C57	1-124-589-11	ELECT	47uF	20%	16V
C58	1-104-760-11	CERAMIC CHIP	0.047uF	10%	50V
C59	1-124-257-00	ELECT	2.2uF	20%	50V
C60	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C61	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C62	1-130-483-00	MYLAR	0.01uF	5%	50V
C63	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C64	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C65	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C66	1-128-054-11	ELECT	22uF	20%	10V
C200	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C201	1-124-584-00	ELECT	100uF	20%	10V
C202	1-126-163-11	ELECT	4.7uF	20%	50V
C203	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V
C204	1-163-113-00	CERAMIC CHIP	68PF	5%	50V
C205	1-163-010-11	CERAMIC CHIP	0.0012uF	10%	50V
C206	1-163-007-11	CERAMIC CHIP	680PF	10%	50V
C207	1-163-007-11	CERAMIC CHIP	680PF	10%	50V
C208	1-126-163-11	ELECT	4.7uF	20%	50V
C209-212					
	1-163-002-11	CERAMIC CHIP	270PF	10%	50V
C213	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C214	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C215	1-124-464-11	ELECT	0.22uF	20%	50V
C216	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V
C250	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C251	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V
C252	1-163-231-11	CERAMIC CHIP	15PF	5%	50V
C253	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C256	1-128-054-11	ELECT	22uF	20%	10V
C257	1-126-301-11	ELECT	1uF	20%	50V
C258	1-104-760-11	CERAMIC CHIP	0.047uF	10%	50V
C259	1-126-162-11	ELECT	3.3uF	20%	50V
C260	1-104-760-11	CERAMIC CHIP	0.047uF	10%	50V
C261	1-104-760-11	CERAMIC CHIP	0.047uF	10%	50V
C262	1-126-157-11	ELECT	10uF	20%	16V
C263	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C264	1-124-584-00	ELECT	100uF	20%	10V
C265	1-126-162-11	ELECT	3.3uF	20%	50V
C266	1-163-005-11	CERAMIC CHIP	470PF	10%	50V
C267	1-163-222-11	CERAMIC CHIP	5PF	0.5PF	50V
C268	1-163-383-11	CERAMIC CHIP	180PF	5%	50V
C269	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C270	1-104-760-11	CERAMIC CHIP	0.047uF	10%	50V
C271	1-104-760-11	CERAMIC CHIP	0.047uF	10%	50V
C272	1-126-159-11	ELECT	0.47uF	20%	50V
C273	1-104-760-11	CERAMIC CHIP	0.047uF	10%	50V
C274	1-164-182-11	CERAMIC CHIP	0.0033uF	10%	50V
C275	1-126-301-11	ELECT	1uF	20%	50V
C276	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C277	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V
C278	1-126-301-11	ELECT	1uF	20%	50V
C279	1-163-023-00	CERAMIC CHIP	0.015uF	5%	50V
C280	1-163-023-00	CERAMIC CHIP	0.015uF	5%	50V

MAIN

Ref. No.	Part No.	Description		Remark	
C281	1-104-760-11	CERAMIC CHIP	0.047uF	10%	50V
C282	1-163-007-11	CERAMIC CHIP	680PF	10%	50V
C283	1-124-463-00	ELECT	0.1uF	20%	50V
C284	1-163-121-00	CERAMIC CHIP	150PF	5%	50V
C285	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C286	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V
C287	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V
C288	1-126-157-11	ELECT	10uF	20%	16V
C290	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C291	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C292	1-163-222-11	CERAMIC CHIP	5PF	0.5PF	50V
C293	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C294	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C296	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C297	1-163-113-00	CERAMIC CHIP	68PF	5%	50V
C350	1-163-005-11	CERAMIC CHIP	470PF	10%	50V
C351	1-163-007-11	CERAMIC CHIP	680PF	10%	50V
C352	1-126-154-11	ELECT	47uF	20%	6.3V
C353	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C354	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C355	1-126-154-11	ELECT	47uF	20%	6.3V
C356	1-163-007-11	CERAMIC CHIP	680PF	10%	50V
C357	1-124-229-00	ELECT	33uF	20%	10V
C450	1-124-584-00	ELECT	100uF	20%	10V
C451	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C452	1-124-229-00	ELECT	33uF	20%	10V
C454	1-163-243-11	CERAMIC CHIP	47PF	5%	50V
C455	1-128-054-11	ELECT	22uF	20%	10V
C456	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V
C459	1-163-023-00	CERAMIC CHIP	0.015uF	5%	50V
C462	1-126-301-11	ELECT	1uF	20%	50V
C464	1-163-243-11	CERAMIC CHIP	47PF	5%	50V
C465	1-128-054-11	ELECT	22uF	20%	10V
C466	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V
C469	1-163-023-00	CERAMIC CHIP	0.015uF	5%	50V
C472-474					
	1-126-301-11	ELECT	1uF	20%	50V
C475	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V
C476	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V
C500-503					
	1-126-301-11	ELECT	1uF	20%	50V
C504	1-126-157-11	ELECT	10uF	20%	16V
C505	1-163-173-00	CERAMIC CHIP	47PF	5%	50V
C506-509					
	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C510	1-126-093-11	ELECT	3.3uF	20%	35V
C525	1-126-157-11	ELECT	10uF	20%	16V
C526	1-124-229-00	ELECT	33uF	20%	10V
C527	1-104-760-11	CERAMIC CHIP	0.047uF	10%	50V

Ref. No.	Part No.	Description		Remark	
C601	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C602	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C603	1-136-169-00	FILM	0.22uF	5%	50V
C604	1-111-046-11	ELECT	3300uF	20%	16V
C608	1-125-701-11	CAPACITOR	0.047F		5.5V
C609	1-124-584-00	ELECT	100uF	20%	10V
C610	1-126-157-11	ELECT	10uF	20%	16V
C611	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C612	1-124-584-00	ELECT	100uF	20%	10V
C613	1-126-157-11	ELECT	10uF	20%	16V
C614	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C615	1-136-165-00	FILM	0.1uF	5%	50V
C616	1-128-134-11	ELECT	100uF	20%	16V
C617	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C618	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C619	1-126-301-11	ELECT	1uF	20%	50V
C620	1-126-157-11	ELECT	10uF	20%	16V
C622	1-164-005-11	CERAMIC CHIP	0.47uF		25V

< FILTER >

CF250	1-579-890-11	FILTER, CERAMIC (450kHz)	
CF251	1-760-553-11	FILTER, CERAMIC (10.7MHz)	

< JACK >

CN901	1-770-279-11	JACK, ANTENNA (ISO) (ANTENNA)	

< CONNECTOR >

* CN902	1-506-993-11	PIN, CONNECTOR (PC BOARD) 11P	
CN904	1-774-701-11	PIN, CONNECTOR 16P	
CN905	1-764-422-11	PLUG, CONNECTOR 12P	

< TRIMMER >

CT250-252			
	1-141-245-00	CAP, TRIMMER	

< DIODE >

D1	8-719-991-33	DIODE	1SS133T-77
D2	8-719-991-33	DIODE	1SS133T-77
D3	8-719-991-33	DIODE	1SS133T-77
D4	8-719-921-54	DIODE	MTZJ-6.2B
D5	8-719-921-54	DIODE	MTZJ-6.2B
D6	8-719-921-54	DIODE	MTZJ-6.2B
D7	8-719-921-54	DIODE	MTZJ-6.2B
D8	8-719-921-54	DIODE	MTZJ-6.2B
D9	8-719-921-54	DIODE	MTZJ-6.2B
D10	8-719-921-54	DIODE	MTZJ-6.2B
D11	8-719-921-54	DIODE	MTZJ-6.2B
D12	8-719-921-54	DIODE	MTZJ-6.2B

Ref. No.	Part No.	Description	Remark
D15	8-719-991-33	DIODE 1SS133T-77	(XR-3208MK2/3509)
D16	8-719-991-33	DIODE 1SS133T-77	(XR-3208MK2/3509)
D51	8-719-991-33	DIODE 1SS133T-77	
D52	8-719-991-33	DIODE 1SS133T-77	
D250	8-719-049-16	DIODE 1SV234	
D251	8-719-053-81	DIODE SVC354S	
D252	8-719-991-33	DIODE 1SS133T-77	
D253	8-719-981-97	DIODE MTZJ-3.0A	
D254	8-719-991-33	DIODE 1SS133T-77	
D255	8-719-991-33	DIODE 1SS133T-77	
D350	8-719-984-80	DIODE 1SR139-200	
D500	8-719-914-43	DIODE DAN202K	
D600	8-719-049-38	DIODE 1N5404TU	
D601	8-719-991-33	DIODE 1SS133T-77	
D602	8-719-034-43	DIODE MA4056-H(QZ)	
D603	8-719-110-14	DIODE RD9.1ES-B3	
D604	8-719-991-33	DIODE 1SS133T-77	
D605	8-719-984-80	DIODE 1SR139-200	
D606	8-719-991-33	DIODE 1SS133T-77	
D607	8-719-921-63	DIODE MTZJ-7.5B	
D608	8-719-991-33	DIODE 1SS133T-77	
		< FUSE >	
F901	1-553-331-11	FUSE (BLADE TYPE) (AUTO FUSE) 15A	
		< IC >	
IC1	8-759-383-10	IC LC7233N-9206	
IC200	8-759-801-94	IC LA2113	
IC250	8-759-261-38	IC LA1875M-TP-T1	
IC350	8-759-924-46	IC BA4560F	
IC450	8-759-330-62	IC LC75383ED	
IC500	8-759-369-42	IC HA13153	
		< JUMPER RESISTOR >	
JR1-4			
	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR5-7			
	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR8	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR9-11			
	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR12	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR13	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR14	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR15	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR16	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR17	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR18	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR19	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR20-22			
	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR24	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR25	1-216-296-00	METAL CHIP 0 5% 1/8W	
		< COIL >	
L1	1-410-513-11	INDUCTOR 22uH	
L2	1-414-137-11	INDUCTOR 0.22uH	(XR-3208MK2/3509)
L3	1-410-065-41	INDUCTOR 3.3uH	(XR-3208MK2/3509)
L50	1-410-513-11	INDUCTOR 22uH	
L51	1-410-503-11	INDUCTOR 3.3uH	
L250	1-410-513-11	INDUCTOR 22uH	
L251	1-411-244-11	COIL (LW OSC)	
L252	1-411-243-11	COIL (AM OSC)	
L253	1-408-405-00	INDUCTOR 4.7uH	
L601	1-411-669-11	COIL, CHOKE	
		< TRANSISTOR >	
Q1	8-729-901-01	TRANSISTOR DTC144EK	
Q2	8-729-901-01	TRANSISTOR DTC144EK	
Q3	8-729-901-01	TRANSISTOR DTC144EK	
Q50	8-729-902-99	TRANSISTOR DTC114TK	
Q51	8-729-902-99	TRANSISTOR DTC114TK	
Q52	8-729-931-02	TRANSISTOR 2SC2413KQ	
Q53	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q54	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q55	8-729-901-97	TRANSISTOR 2SA1036K-Q	
Q56	8-729-900-53	TRANSISTOR DTC114EK	
Q60	8-729-901-01	TRANSISTOR DTC144EK	
Q61	8-729-901-00	TRANSISTOR DTC124EK	
Q250	8-729-012-35	TRANSISTOR 2SK711-BL	
Q251	8-729-931-02	TRANSISTOR 2SC2413KQ	
Q252	8-729-032-50	TRANSISTOR 2SC4018K-N	
Q253	8-729-032-50	TRANSISTOR 2SC4018K-N	
Q254	8-729-012-35	TRANSISTOR 2SK711-BL	
Q255	8-729-902-99	TRANSISTOR DTC114TK	
Q256	8-729-902-99	TRANSISTOR DTC114TK	
Q257	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q258	8-729-901-01	TRANSISTOR DTC144EK	
Q259	8-729-901-01	TRANSISTOR DTC144EK	
Q260	8-729-900-53	TRANSISTOR DTC114EK	
Q261	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q262	8-729-216-22	TRANSISTOR 2SA1162-G	
Q350	8-729-205-94	TRANSISTOR 2SA1428-O	
Q351	8-729-900-53	TRANSISTOR DTC114EK	
Q500	8-729-920-21	TRANSISTOR DTC314TKH04	
Q501	8-729-920-21	TRANSISTOR DTC314TKH04	
Q502	8-729-920-21	TRANSISTOR DTC314TKH04	

MAIN

Ref. No.	Part No.	Description				Remark
Q503	8-729-920-21	TRANSISTOR	DTC314TKH04			
Q504	8-729-900-51	TRANSISTOR	DTA114TK			
Q505	8-729-901-00	TRANSISTOR	DTC124EK			
Q506	8-729-216-22	TRANSISTOR	2SA1162-G			
Q507	8-729-901-05	TRANSISTOR	DTA124EK			
Q600	8-729-205-97	TRANSISTOR	2SC3668-Y			
Q601	8-729-209-15	TRANSISTOR	2SD2012			
Q602	8-729-901-04	TRANSISTOR	DTA114EK			
Q603	8-729-901-97	TRANSISTOR	2SA1036K-Q			
Q604	8-729-900-53	TRANSISTOR	DTC114EK			
Q605	8-729-205-94	TRANSISTOR	2SA1428-O			
Q606	8-729-216-22	TRANSISTOR	2SA1162-G			
Q607	8-729-901-00	TRANSISTOR	DTC124EK			
Q608	8-729-902-99	TRANSISTOR	DTC114TK			
Q609	8-729-901-97	TRANSISTOR	2SA1036K-Q			
Q610	8-729-901-06	TRANSISTOR	DTA144EK			
Q611	8-729-120-28	TRANSISTOR	2SC1623-L5L6			
Q612	8-729-901-00	TRANSISTOR	DTC124EK			
		< RESISTOR >				
R1	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R2	1-216-049-11	METAL GLAZE	1K	5%	1/10W	
R3	1-247-895-00	CARBON	470K	5%	1/4W	
R4	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R5	1-247-879-11	CARBON	100K	5%	1/4W	
R6	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R7	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R8	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R9-12						
	1-216-049-11	METAL GLAZE	1K	5%	1/10W	
R15	1-249-417-11	CARBON	1K	5%	1/4W	
R16	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R17	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R18-20						
	1-216-049-11	METAL GLAZE	1K	5%	1/10W	
R21-23						
	1-249-417-11	CARBON	1K	5%	1/4W	
R24	1-216-049-11	METAL GLAZE	1K	5%	1/10W	
R25	1-216-222-00	METAL GLAZE	10K	5%	1/8W	
R26	1-216-222-00	METAL GLAZE	10K	5%	1/8W	
R27	1-216-198-00	METAL CHIP	1K	5%	1/8W	
R28	1-216-198-00	METAL CHIP	1K	5%	1/8W	
R29	1-216-049-11	METAL GLAZE	1K	5%	1/10W	
R30	1-216-049-11	METAL GLAZE	1K	5%	1/10W	
R31	1-208-806-11	METAL GLAZE	10K	1%	1/10W	
R32	1-249-417-11	CARBON	1K	5%	1/4W	
R33	1-216-049-11	METAL GLAZE	1K	5%	1/10W	
R34	1-216-049-11	METAL GLAZE	1K	5%	1/10W	
R35	1-216-194-00	METAL CHIP	680	5%	1/8W	

Ref. No.	Part No.	Description				Remark
R36-38						
	1-216-049-11	METAL GLAZE	1K	5%	1/10W	
R39	1-216-113-00	METAL CHIP	470K	5%	1/10W	
R40	1-249-411-11	CARBON	330	5%	1/4W	
R41	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R42	1-216-075-00	METAL CHIP	12K	5%	1/10W	
R43	1-244-865-11	CARBON	470	5%	1/2W	(XR-3208MK2/3509)
R47	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R49	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R50	1-216-025-00	METAL CHIP	100	5%	1/10W	
R51	1-216-049-11	METAL GLAZE	1K	5%	1/10W	
R52	1-216-295-00	METAL CHIP	0	5%	1/10W	
R53	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R54	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R55	1-216-039-00	METAL CHIP	390	5%	1/10W	
R56	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R57	1-216-029-00	METAL CHIP	150	5%	1/10W	
R58	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R59	1-216-039-00	METAL CHIP	390	5%	1/10W	
R60	1-249-417-11	CARBON	1K	5%	1/4W	
R61	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R62	1-216-049-11	METAL GLAZE	1K	5%	1/10W	
R63	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R64	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R65	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R68	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R70	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R73	1-216-218-00	METAL GLAZE	6.8K	5%	1/8W	
R74	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R200	1-216-150-00	METAL GLAZE	10	5%	1/8W	
R201	1-216-063-00	METAL CHIP	3.9K	5%	1/10W	
R202-205						
	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R206	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R207	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R208	1-216-059-00	METAL CHIP	2.7K	5%	1/10W	
R209	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R210	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R211	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R212	1-216-246-00	METAL GLAZE	100K	5%	1/8W	
R213	1-216-069-11	METAL GLAZE	6.8K	5%	1/10W	
R251	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R252	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R254	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R255	1-216-121-00	METAL CHIP	1M	5%	1/10W	
R256	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R257	1-216-079-00	METAL CHIP	18K	5%	1/10W	
R258	1-216-073-00	METAL CHIP	10K	5%	1/10W	

Ref. No.	Part No.	Description			Remark
R259	1-216-025-00	METAL CHIP	100	5%	1/10W
R260-262					
	1-216-097-00	METAL CHIP	100K	5%	1/10W
R263	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R264	1-216-101-00	METAL CHIP	150K	5%	1/10W
R265	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R266	1-249-423-11	CARBON	3.3K	5%	1/4W
R267	1-249-423-11	CARBON	3.3K	5%	1/4W
R269	1-216-089-00	METAL CHIP	47K	5%	1/10W
R271	1-216-041-11	METAL GLAZE	470	5%	1/10W
R272	1-216-097-00	METAL CHIP	100K	5%	1/10W
R273	1-216-085-00	METAL CHIP	33K	5%	1/10W
R275	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R276	1-216-079-00	METAL CHIP	18K	5%	1/10W
R277	1-216-079-00	METAL CHIP	18K	5%	1/10W
R278	1-216-073-00	METAL CHIP	10K	5%	1/10W
R279	1-216-073-00	METAL CHIP	10K	5%	1/10W
R281	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R282	1-216-103-00	METAL CHIP	180K	5%	1/10W
R283	1-216-097-00	METAL CHIP	100K	5%	1/10W
R284	1-216-089-00	METAL CHIP	47K	5%	1/10W
R285	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R286	1-216-078-00	METAL GLAZE	16K	5%	1/10W
R287	1-216-089-00	METAL CHIP	47K	5%	1/10W
R350	1-249-418-11	CARBON	1.2K	5%	1/4W
R352	1-216-073-00	METAL CHIP	10K	5%	1/10W
R353	1-216-089-00	METAL CHIP	47K	5%	1/10W
R354	1-216-015-00	METAL CHIP	39	5%	1/10W
R355	1-216-077-00	METAL CHIP	15K	5%	1/10W
R356	1-216-115-00	METAL CHIP	560K	5%	1/10W
R357	1-216-073-00	METAL CHIP	10K	5%	1/10W
R358	1-216-073-00	METAL CHIP	10K	5%	1/10W
R359	1-216-025-00	METAL CHIP	100	5%	1/10W
R360	1-216-115-00	METAL CHIP	560K	5%	1/10W
R361	1-216-077-00	METAL CHIP	15K	5%	1/10W
R362	1-216-015-00	METAL CHIP	39	5%	1/10W
R363	1-216-089-00	METAL CHIP	47K	5%	1/10W
R450	1-216-150-00	METAL GLAZE	10	5%	1/8W
R451	1-216-097-00	METAL CHIP	100K	5%	1/10W
R452	1-216-097-00	METAL CHIP	100K	5%	1/10W
R500-503					
	1-216-073-00	METAL CHIP	10K	5%	1/10W
R504-507					
	1-216-049-11	METAL GLAZE	1K	5%	1/10W
R508-511					
	1-216-075-00	METAL CHIP	12K	5%	1/10W
R512-515					
	1-216-077-00	METAL CHIP	15K	5%	1/10W
R516-519					
	1-216-129-00	METAL CHIP	2.2M	5%	1/10W

Ref. No.	Part No.	Description			Remark
R521	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R522	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R531	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R533	1-216-105-00	METAL CHIP	220K	5%	1/10W
R534	1-216-073-00	METAL CHIP	10K	5%	1/10W
R535	1-216-071-00	METAL CHIP	8.2K	5%	1/10W
R600	1-216-073-00	METAL CHIP	10K	5%	1/10W
R601	1-216-220-00	METAL GLAZE	8.2K	5%	1/8W
R602	1-216-081-00	METAL CHIP	22K	5%	1/10W
R603	1-247-807-11	CARBON	100	5%	1/4W
R604	1-216-041-11	METAL GLAZE	470	5%	1/10W
R605	1-216-373-11	METAL OXIDE	2.2	5%	2W F
R606	1-216-081-00	METAL CHIP	22K	5%	1/10W
R607	1-247-835-11	CARBON	1.5K	5%	1/4W
R608	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R609	1-216-073-00	METAL CHIP	10K	5%	1/10W
R610	1-247-835-11	CARBON	1.5K	5%	1/4W
R611	1-216-357-00	METAL OXIDE	4.7	5%	1W F
R613	1-216-089-00	METAL CHIP	47K	5%	1/10W
R614	1-216-097-00	METAL CHIP	100K	5%	1/10W
R615	1-216-081-00	METAL CHIP	22K	5%	1/10W
R616	1-216-081-00	METAL CHIP	22K	5%	1/10W
R617	1-249-417-11	CARBON	1K	5%	1/4W
R618	1-216-073-00	METAL CHIP	10K	5%	1/10W
R619	1-216-295-00	METAL CHIP	0	5%	1/10W

< VARIABLE RESISTOR >

RV251	1-241-689-11	RES, ADJ, CARBON 22K
RV252	1-241-686-11	RES, ADJ, CARBON 2.2K
RV253	1-223-927-11	RES, ADJ, CARBON 330K

< COIL >

T250	1-411-239-11	COIL (AM ANT)
T251	1-411-240-11	COIL (LW ANT)
T252	1-411-239-11	COIL (AM ANT)
T253	1-411-240-11	COIL (LW ANT)
T254	1-411-246-11	COIL (AM IFT)
T255	1-411-245-11	COIL (FM IFT)

< TUNER >

TU901	1-693-285-11	TUNER, FM

< VIBRATOR >

X1	1-567-713-11	VIBRATOR, CRYSTAL (4.5MHz)
X250	1-760-250-11	OSCILLATOR, CERAMIC (456kHz)

****

SWITCH

SEE ADDITIONAL INFORMATION

Ref. No.	Part No.	Description			Remark
*	1-661-115-11	SWITCH BOARD			
		**********			
*	3-922-509-01	PLATE (LCD), LIGHT GUIDE			
*	3-922-522-01	PLATE (LCD), GROUND			
*	3-934-818-01	REFLECTOR			
*	3-934-819-01	INSULATOR			
		< CAPACITOR >			
C901	1-163-007-11	CERAMIC CHIP	680PF	10%	50V
C902	1-162-637-11	CERAMIC CHIP	0.47uF		16V
C903	1-163-005-11	CERAMIC CHIP	470PF	10%	50V
C904	1-162-637-11	CERAMIC CHIP	0.47uF		16V
C905	1-162-637-11	CERAMIC CHIP	0.47uF		16V
		< CONNECTOR >			
CN906	1-764-423-11	PIN, CONNECTOR 12P			
		< DIODE >			
D900	8-719-977-03	DIODE	DTZ5.6B		
D901	8-719-105-99	DIODE	RD6.2M-B1		
D902	8-719-105-99	DIODE	RD6.2M-B1		
D903	8-719-105-99	DIODE	RD6.2M-B1		
D904	8-719-988-62	DIODE	1SS355		
		< IC >			
IC900	8-759-341-77	IC	LC75822E		
		< JUMPER RESISTOR >			
JR900	1-216-296-00	METAL CHIP	0	5%	1/8W
JR901	1-216-295-00	METAL CHIP	0	5%	1/10W
JR902-904	1-216-296-00	METAL CHIP	0	5%	1/8W
JR906-910	1-216-296-00	METAL CHIP	0	5%	1/8W
		< LIQUID CRYSTAL DISPLAY >			
LCD900	1-801-228-11	DISPLAY PANEL, LIQUID CRYSTAL			
		< PILOT LAMP >			
PL900-903	1-517-535-11	LAMP, PILOT			
		< RESISTOR >			
R901	1-216-091-00	METAL CHIP	56K	5%	1/10W
R902	1-216-113-00	METAL CHIP	470K	5%	1/10W
R903	1-216-202-00	METAL GLAZE	1.5K	5%	1/8W
R905	1-216-211-00	METAL GLAZE	3.6K	5%	1/8W
R906	1-216-211-00	METAL GLAZE	3.6K	5%	1/8W
R907	1-216-211-00	METAL GLAZE	3.6K	5%	1/8W
R908	1-216-211-00	METAL GLAZE	3.6K	5%	1/8W
R913	1-216-296-00	METAL CHIP	0	5%	1/8W
		< SWITCH >			
S900	1-572-704-21	SWITCH, KEY BOARD (TUNER/A.MEM)			
S901	1-572-704-21	SWITCH, KEY BOARD (SEL)			
S902	1-572-704-21	SWITCH, KEY BOARD (+)			
S903	1-572-704-21	SWITCH, KEY BOARD (-)			
S904	1-572-704-21	SWITCH, KEY BOARD (DSPL)			
S905	1-572-704-21	SWITCH, KEY BOARD (SEEK/MANU -)			
S906	1-572-704-21	SWITCH, KEY BOARD (1) (XR-3208MK2/3509)			
S906	1-572-704-21	SWITCH, KEY BOARD (1/ATA) (XR-3501MK2)			
S907	1-572-704-21	SWITCH, KEY BOARD (2)			
S908	1-572-704-21	SWITCH, KEY BOARD (3)			
S909	1-572-704-21	SWITCH, KEY BOARD (4)			
S910	1-572-704-21	SWITCH, KEY BOARD (6)			
S911	1-572-704-21	SWITCH, KEY BOARD (LOUD)			
S912	1-572-704-21	SWITCH, KEY BOARD (5)			
S913	1-572-704-21	SWITCH, KEY BOARD (SENS)			
S914	1-572-704-21	SWITCH, KEY BOARD (OFF)			
S915	1-572-704-21	SWITCH, KEY BOARD (SEEK/MANU +)			
**********					
		MISCELLANEOUS			
		**********			
14	1-776-527-11	CORD (WITH CONNECTOR) (ISO) (XR-3501MK2)			
17	1-776-208-21	CORD (WITH CONNECTOR) (VAG-UK) (XR-3509)			
18	1-777-184-11	CORD (WITH CONNECTOR) (XR-3208MK2)			
F901	1-553-331-11	FUSE (BLADE TYPE) (AUTO FUSE) 15A			
HP701	1-543-717-11	HEAD, MAGNETIC (PLAYBACK)			
M701	X-3364-496-1	MOTOR ASSY (REEL/CAPSTAN)			
S701	1-692-502-11	SWITCH, SLIDE (DIRECTION)			
S702	1-692-065-11	SWITCH, LEAF (MUTE)			
S703	1-554-790-21	SWITCH, POWER (TAPE DET)			
**********					

Ref. No.	Part No.	Description	Remark
		ACCESSORIES & PACKING MATERIALS	
		******	
	3-810-725-11	MANUAL, INSTRUCTION (ENGLISH, FRENCH, GERMAN, ITALIAN, DUTCH)	(XR-3501MK2)
	3-810-725-21	MANUAL, INSTRUCTION (SPANISH, SWEDISH, PORTUGUESE)	(XR-3501MK2)
	3-810-726-11	MANUAL, INSTRUCTION, INSTALL (ENGLISH, FRENCH, GERMAN, ITALIAN, DUTCH)	(XR-3501MK2)
	3-810-726-21	MANUAL, INSTRUCTION, INSTALL (SPANISH, SWEDISH, PORTUGUESE)	(XR-3501MK2)
	3-810-731-11	MANUAL, INSTRUCTION (ENGLISH)	(XR-3509)
	3-856-035-11	MANUAL, INSTRUCTION (ENGLISH)	(XR-3208MK2)
	X-3367-692-3	CASE ASSY	

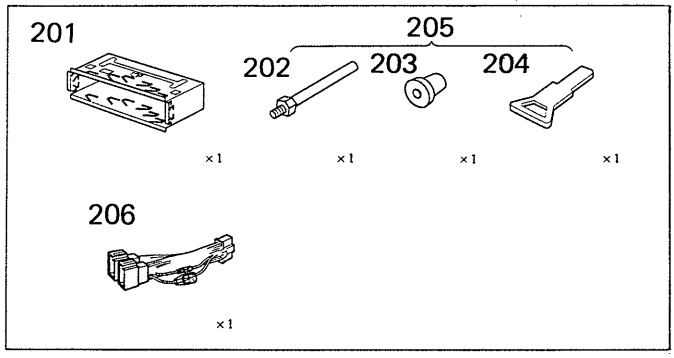
****

****
HARDWARE LIST
****

#1	7-685-106-19	SCREW +P 2X10 TYPE2 NON-SLIT	
#2	7-621-772-10	SCREW +B 2X4	
#3	7-621-770-XX	SCREW +PTT 2.6X8 (S)	
#4	7-621-775-08	SCREW +P 2.6X3	
#5	7-627-553-88	SCREW, PRECISION +P 2X7	
#6	7-621-255-15	SCREW +P 2X3	
#7	7-621-255-20	SCREW +P 2X4	
#8	7-621-255-25	SCREW +PTT 2X4 (S)	
#9	7-621-555-10	SCREW +K 2X3	
#10	7-621-591-00	SCREW +K 2X4	
#11	7-624-102-04	STOP RING 1.5, TYPE -E	
#12	7-624-104-04	STOP RING 2.0, TYPE -E	
#13	7-624-118-01	RING, RETAINING E-2.5	
#14	7-621-773-95	SCREW +B 2.6X6	
#15	7-621-770-67	SCREW +B 2.6X6	

****

Ref. No.	Part No.	Description	Remark
		MOUNTING HARDWARE	
		******	
201	X-3367-691-1	FRAME ASSY, FITTING	
202	3-386-828-01	SCREW, FITTING	
203	3-349-410-01	BUSHING	
204	3-909-097-01	KEY	
205	X-3370-077-1	SCREW ASSY (AE.KEY), FITTING	
206	1-776-208-21	CORD (WITH CONNECTOR)	(VAG-UK) (XR-3509)
206	1-776-527-11	CORD (WITH CONNECTOR)	(ISO) (XR-3501MK2)
206	1-777-184-11	CORD (WITH CONNECTOR)	(XR-3208MK2)



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Mobile Electronics Company

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Quality Engineering Dept.

XR-3208MK2/3501MK2/3509

SONY®
SERVICE MANUAL

AEP Model
UK Model

SUPPLEMENT-1

File this supplement with the service manual.

Subject : Add the Green Illumination Model for XR-3501MK2

Difference of Part List

Page	Amber illumination model				Green illumination model		
	Ref. No.	Part No.	Description	Remark	Part No.	Description	Remark
42	PL900-903	1-517-535-11	LAMP, PILOT		1-517-534-11	LAMP, PILOT	

9-923-488-81

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Personal & Mobile Communication Company

English
96E0446-1D
Printed in Japan
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Published by Quality Assurance Dept.

XR-3208MK2/3501MK2/3509

SONY

SERVICE MANUAL

AEP Model
UK Model

SUPPLEMENT-2

File this supplement with the service manual.

Subject : Change of Main Board

(ENG-96015)

The Main board tuner section changed from discrete circuit to tuner unit (TUX-006).

1. CHANGE THE ELECTRICAL ADJUSTMENTS

DECK SECTION | **0 dB = 0.775 V**

1. The adjustments should be performed in the order given in this service manual.
2. The adjustments should be performed for both L-CH and R-CH.

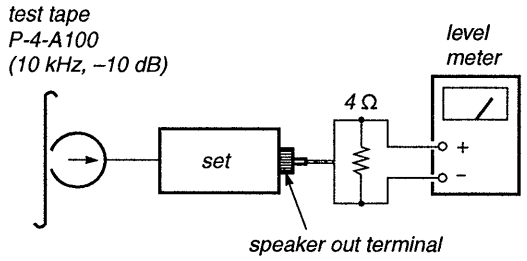
Test Tape

Type	Signal	Used for
P-4-A100	10 kHz, –10 dB	head azimuth adjustment
WS-48A	3 kHz, 0 dB	tape speed adjustment

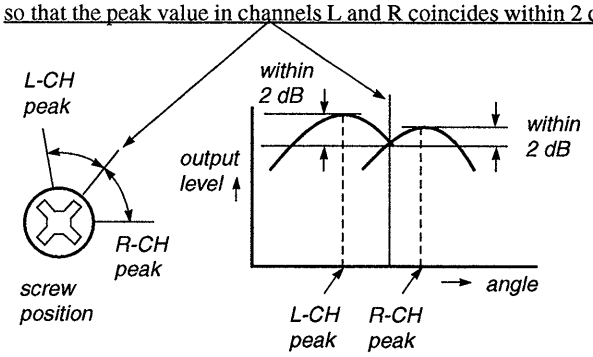
PB Head Azimuth Adjustment

Procedure :

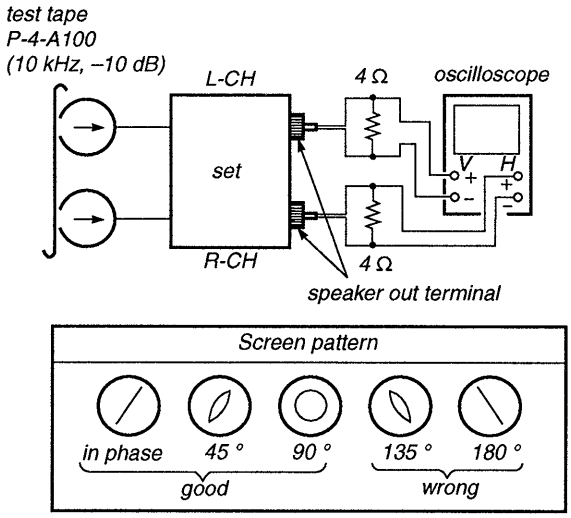
1. Put the set into the FWD PB mode.



2. Turn the screw and check the output peak value. Adjust the screw so that the peak value in channels L and R coincides within 2 dB.

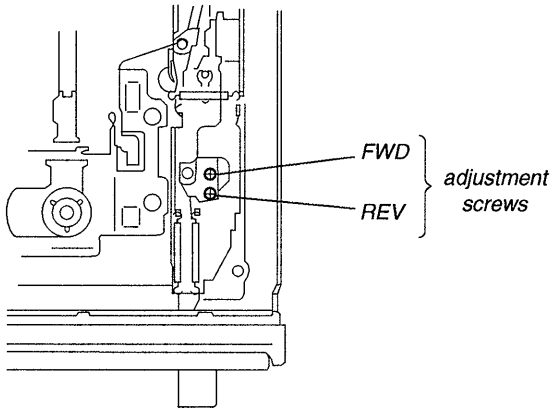


3. Check the phase in the FWD PB mode.



4. Repeat the above adjustment for the REV PB mode.
5. Check that output level difference between FWD PB mode and REV PB mode is within 4 dB.

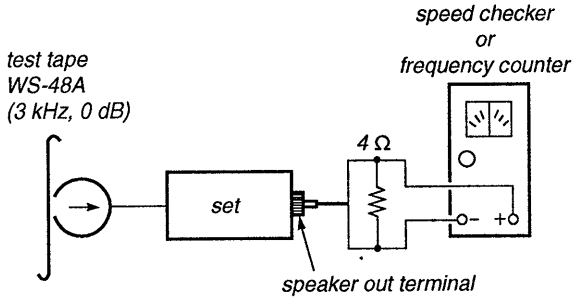
Adjustment Location : PB head



Tape Speed Adjustment

Procedure :

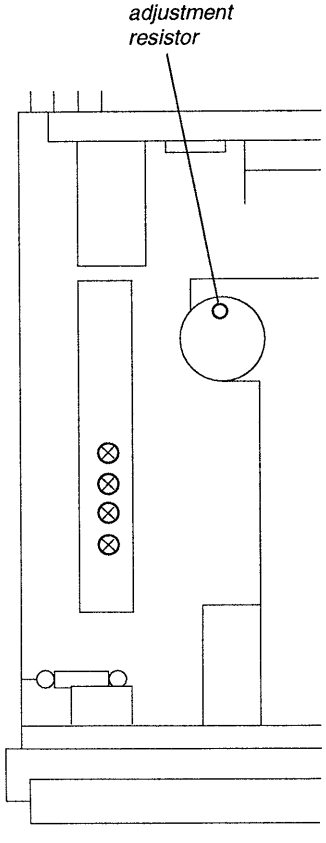
1. Put the set into the FWD PB mode.



Specification : Constant speed

Speed checker	Frequency counter
– 2.0 to + 3.0 %	2,940 to 3,090 Hz

Adjustment Location :



TUNER SECTION | 0 dB = 1 µV

Cautions during repair

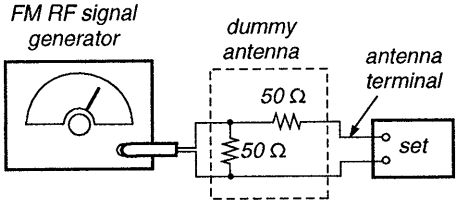
When the tuner unit is defective, replace it by a new one because its internal block is difficult to repair.

FM SEEK Stop Adjustment

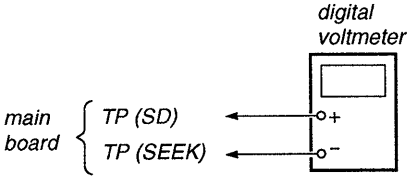
Note : Be sure to perform this adjustment before "MW SEEK Stop Adjustment".

Setting :

TUNER button : FMI



Carrier frequency : 98.00MHz
Output level : 22 dB (12.6 µV)
Mode : mono
Modulation : 1 kHz, 22.5 kHz deviation (30 %)



Procedure :

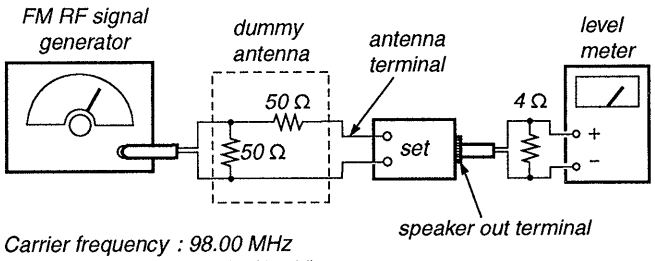
1. Adjust RV2 on TU1 so that the reading on the digital voltmeter changes point from low to high.

Adjustment Location : See page 5.

FM Noise Focus Adjustment

Setting :

TUNER button : FMI



Carrier frequency : 98.00 MHz
Output level : 60 dB (1 mV)
Mode : mono
Modulation : 1 kHz, 75 kHz deviation (100 %)

Procedure:

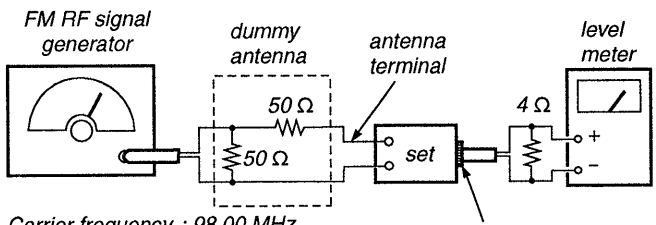
1. Tune the set to 98.00 MHz.
2. The then output level is supposing that (A) dB.
3. Adjust with the volume RV3 on TU1 so that the output level is (A) – 31 dB then signal generator input set to – 20 dB.

Adjustment Location : See page 5.

FM Stereo Separation Adjustment

Setting :

TUNER button : FMI



Carrier frequency : 98.00 MHz
Output level : 70 dB (3.2 mV)
Mode : stereo
Modulation : main : 1 kHz, 33.75 kHz deviation (45 %)
sub : 1 kHz, 33.75 kHz deviation (45 %)
pilot : 1kHz, 7.5kHz deviation (10 %)

Procedure :

FM stereo signal generator output channel	Level meter connection	Level meter reading (dB)
L-CH	L-CH	Ⓐ
R-CH	L-CH	Ⓑ Adjustment RV4 on TU1 for minimum reading.
R-CH	R-CH	Ⓒ
L-CH	R-CH	Ⓓ Adjustment RV4 on TU1 for minimum reading.

L-CH Stereo separation : Ⓐ – Ⓑ
R-CH Stereo separation : Ⓒ – Ⓓ
The separations of both channels should be equal.

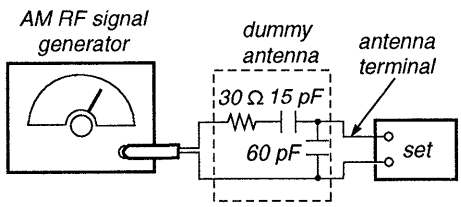
Specification : Separation more than 27 dB

Adjustment Location : See page 5.

MW SEEK Stop Adjustment

Setting :

TUNER button : MW



Carrier frequency : 999 kHz
Output level : 33 dB (44.7 µV)
Modulation : no modulation

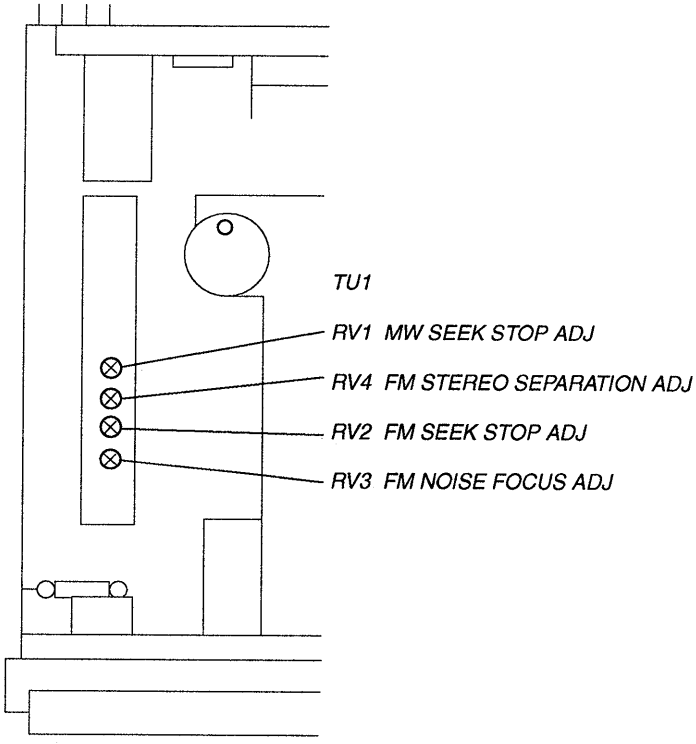
Procedure :

1. Short the jumper wire between TP (SEEK) and Q610 emitter (+5 V). (See page 5.)
2. Adjust RV1 on TU1 so that the reading on the digital voltmeter changes point from low to high.
3. After adjustments is completed remove the jumper wire.

Adjustment Location : See page 5.

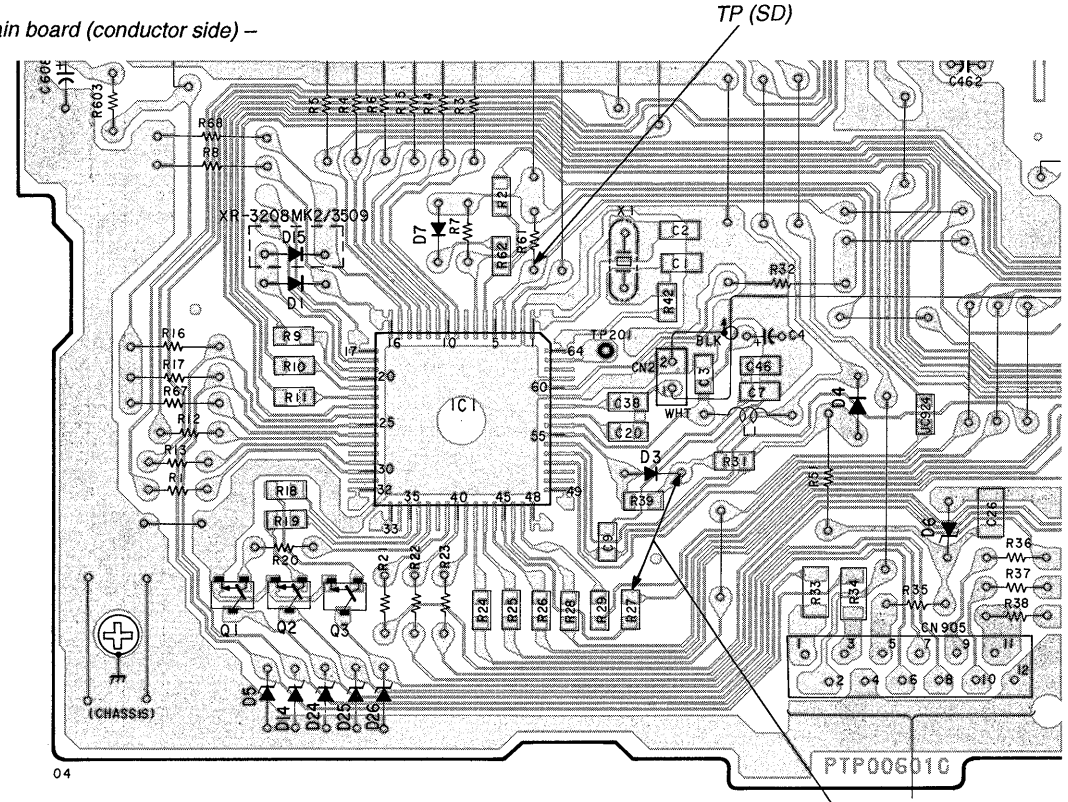
Adjustment Location :

– set upper view –



Measurement Point :

– main board (conductor side) –



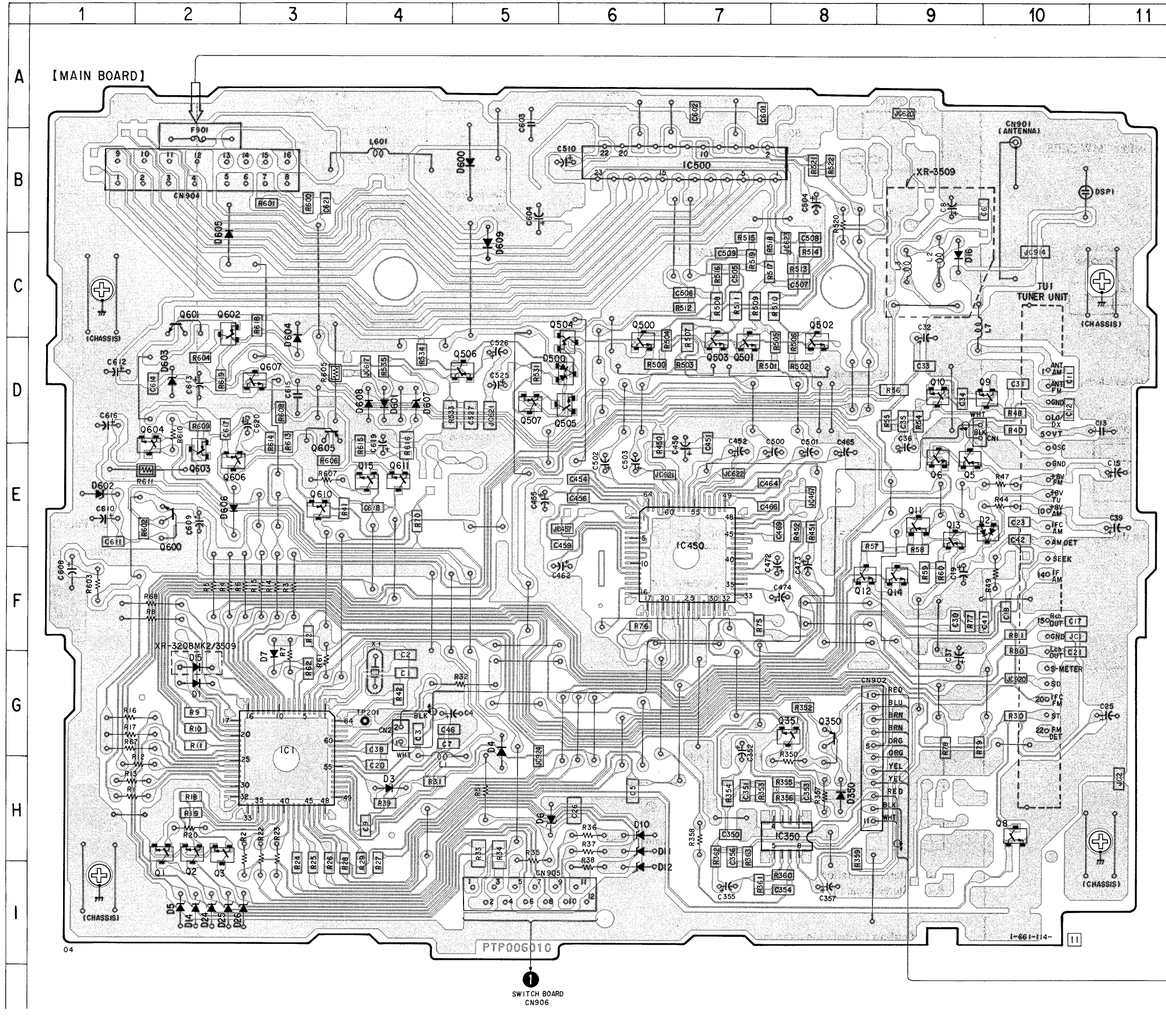
• Semiconductor Location

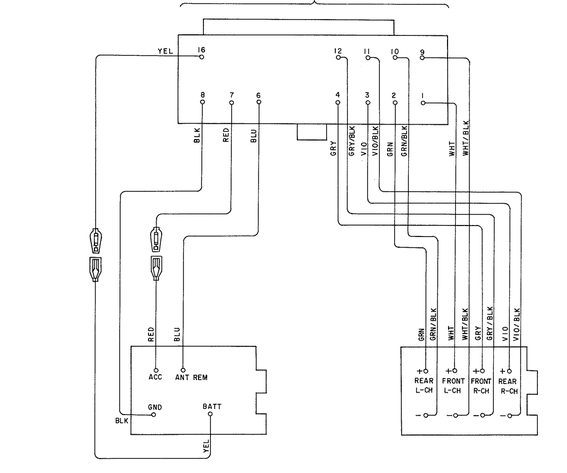
Ref. No.	Location	Ref. No.	Location
D1	G-2	Q1	I-2
D2	E-10	Q2	I-2
D3	H-4	Q3	I-2
D4	G-5	Q5	E-9
D5	I-2	Q6	E-9
D6	H-5	Q8	H-10
D7	G-3	Q9	D-10
D10	H-6	Q10	D-9
D11	H-6	Q11	E-9
D12	H-6	Q12	F-8
D14	I-2	Q13	E-9
(D15)	G-2	Q14	F-9
< D16 >	C-9	Q15	E-4
D24	I-2	Q350	G-8
D25	I-2	Q351	G-8
D26	I-2	Q500	D-6
D350	H-8	Q501	D-7
D500	D-6	Q502	D-8
D600	B-5	Q503	D-7
D601	D-4	Q504	D-6
D602	E-1	Q505	D-6
D603	D-2	Q506	D-5
D604	C-3	Q507	D-5
D605	C-2	Q600	E-2
D606	E-2	Q601	C-2
D607	D-4	Q602	C-2
D608	D-4	Q603	E-2
D609	C-5	Q604	D-2
		Q605	D-3
IC1	H-3	Q606	E-2
IC350	H-8	Q607	D-3
IC450	F-7	Q610	E-3
IC500	B-7	Q611	E-4

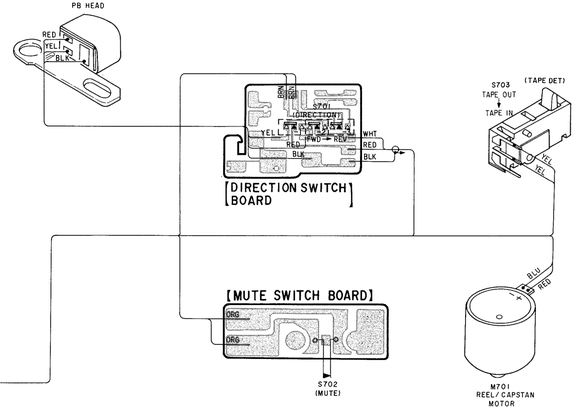
( ) : XR-3208MK2/3509 only
< > : XR-3509 only

Note :
- ○— : parts extracted from the component side.
- —— : parts extracted from the conductor side.
- ▨ : Pattern on the side which is seen.

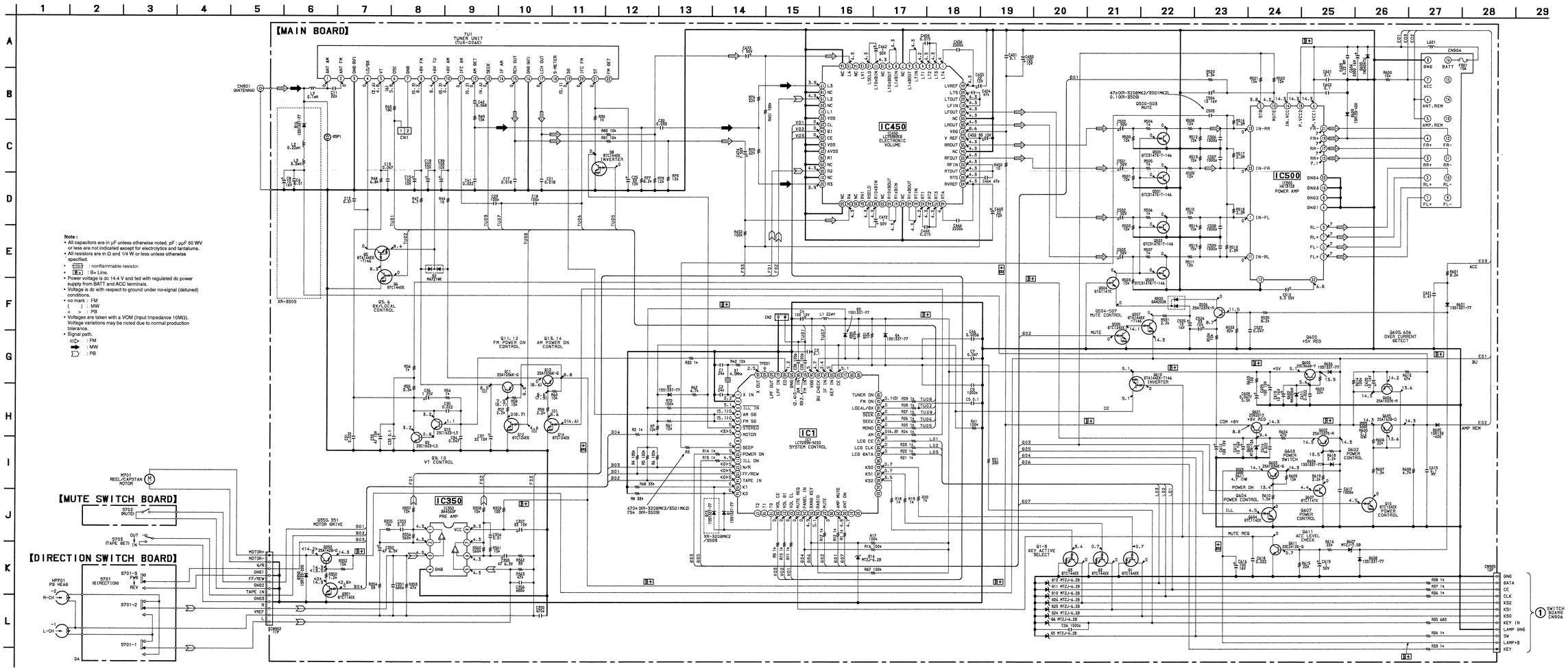
2. PRINTED WIRING BOARDS –MAIN SECTION–





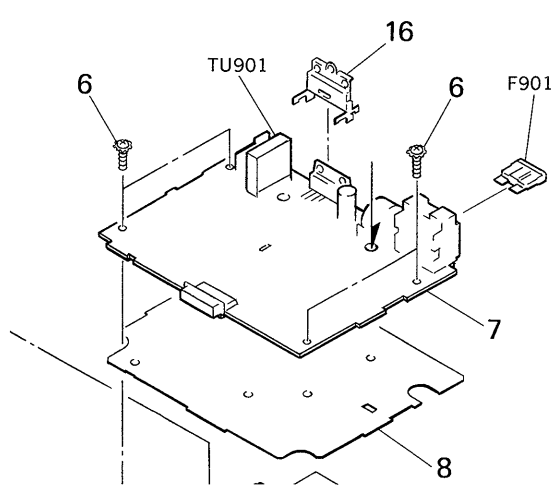
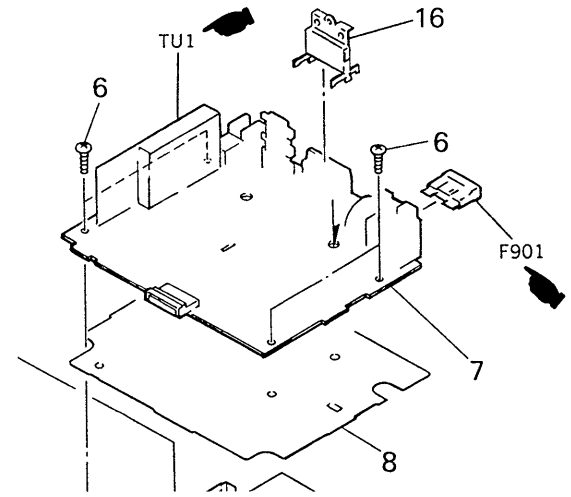


3. SCHEMATIC DIAGRAM –MAIN SECTION–



4. CHANGE THE EXPLODED VIEW

☛ : Changed portion

Page	Former Type	New Type
33		

Ref. No.	Part No.	Description	Remark
* 7	A-3294-059-A	MAIN BOARD, COMPLETE (XR-3208MK2/3509)	
* 7	————————		
F901	1-553-331-11	FUSE (BLADE TYPE) (AUTO FUSE) 15A	
TU901	1-693-285-11	TUNER, FM	
TU1	————————		

Part No.	Description	Remark
A-3294-059-A	MAIN BOARD, COMPLETE (XR-3509)	
A-3294-196-A	MAIN BOARD, COMPLETE (XR-3208MK2)	
1-532-982-11	FUSE (BLADE TYPE) (AUTO FUSE) 15A	
————————		
A-3282-012-A	TUNER UNIT (TUX-006(E))	

MAIN

SEE ADDITIONAL INFORMATION

5. ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms.
  METAL:Metal-film resistor.
  METAL OXIDE: Metal oxide-film resistor.
  F:nonflammable
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u : μ, for example:
  uA.. : μA.. uPA.. : μPA..
  uPB.. : μPB.. uPC.. : μPC.. uPD.. : μPD..
- CAPACITORS
  uF : μF
- COILS
  uH : μH

When indicating parts by reference number, please include the board.

Ref. No.	Part No.	Description			Remark
*	A-3294-052-A	MAIN BOARD, COMPLETE (XR-3501MK2)			
*	A-3294-059-A	MAIN BOARD, COMPLETE (XR-3509)			
*	A-3294-196-A	MAIN BOARD, COMPLETE (XR-3208MK2)			
		**********			
*	3-931-260-01	BRACKET (IC)			
		< CAPACITOR >			
C1	1-163-102-00	CERAMIC CHIP	24PF	5%	50V
C2	1-163-102-00	CERAMIC CHIP	24PF	5%	50V
C3	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C4	1-124-584-00	ELECT	100uF	20%	10V
C5	1-163-077-00	CERAMIC CHIP	0.1uF	10%	25V
C6	1-164-232-11	CERAMIC CHIP	0.01uF		50V (XR-3509)
C7	1-104-760-11	CERAMIC CHIP	0.047uF	10%	50V
C8	1-126-157-11	ELECT	10uF	20%	16V (XR-3509)
C9	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C11	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C12	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C13	1-136-834-11	FILM	0.047uF	5%	50V
C15	1-124-584-00	ELECT	100uF	20%	10V
C17	1-163-024-00	CERAMIC CHIP	0.018uF	10%	50V
C18	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C19	1-126-176-11	ELECT	220uF	20%	10V
C20	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C21	1-163-024-00	CERAMIC CHIP	0.018uF	10%	50V
C23	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C25	1-124-229-00	ELECT	33uF	20%	10V
C26	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C30	1-163-989-11	CERAMIC CHIP	0.033uF	10%	25V
C31	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C32	1-124-589-11	ELECT	47uF	20%	16V
C33	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C34	1-104-760-11	CERAMIC CHIP	0.047uF	10%	50V
C35	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C36	1-131-347-00	TANTALUM	1uF	10%	35V
C37	1-128-054-11	ELECT	22uF	20%	10V
C38	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C39	1-124-584-00	ELECT	100uF	20%	10V

Ref. No.	Part No.	Description			Remark
C41	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C42	1-164-344-11	CERAMIC CHIP	0.068uF	10%	25V
C46	1-163-018-00	CERAMIC CHIP	0.0056uF	5%	50V
C350	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C351	1-163-137-00	CERAMIC CHIP	680PF	5%	50V
C352	1-126-154-11	ELECT	47uF	20%	6.3V
C353	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C354	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C355	1-126-154-11	ELECT	47uF	20%	6.3V
C356	1-163-137-00	CERAMIC CHIP	680PF	5%	50V
C357	1-124-229-00	ELECT	33uF	20%	10V
C450	1-124-584-00	ELECT	100uF	20%	10V
C451	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C452	1-124-229-00	ELECT	33uF	20%	10V
C454	1-163-243-11	CERAMIC CHIP	47PF	5%	50V
C455	1-128-054-11	ELECT	22uF	20%	10V
C456	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V
C459	1-163-023-00	CERAMIC CHIP	0.015uF	5%	50V
C462	1-126-301-11	ELECT	1uF	20%	50V
C464	1-163-243-11	CERAMIC CHIP	47PF	5%	50V
C465	1-128-054-11	ELECT	22uF	20%	10V
C466	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V
C469	1-163-023-00	CERAMIC CHIP	0.015uF	5%	50V
C472	1-126-301-11	ELECT	1uF	20%	50V
C473	1-126-301-11	ELECT	1uF	20%	50V
C474	1-126-301-11	ELECT	1uF	20%	50V
C500	1-126-301-11	ELECT	1uF	20%	50V
C501	1-126-301-11	ELECT	1uF	20%	50V
C502	1-126-301-11	ELECT	1uF	20%	50V
C503	1-126-301-11	ELECT	1uF	20%	50V
C504	1-126-157-11	ELECT	10uF	20%	16V
C505	1-163-243-11	CERAMIC CHIP	47PF	5%	50V (XR-3208MK2/3501MK2)
C505	1-163-038-00	CERAMIC CHIP	0.1uF		25V (XR-3509)
C506	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C507	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C508	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C509	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C510	1-126-162-11	ELECT	3.3uF	20%	50V
C525	1-126-157-11	ELECT	10uF	20%	16V

Ref. No.	Part No.	Description			Remark
C526	1-124-229-00	ELECT	33uF	20%	10V
C527	1-164-493-11	CERAMIC CHIP	0.047uF	10%	50V
C601	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C602	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C603	1-136-169-00	FILM	0.22uF	5%	50V
C604	1-111-046-11	ELECT	0.0033F	20%	16V
C608	1-125-701-11	DOUBLE LAYERS	0.047F		5.5V
C609	1-124-584-00	ELECT	100uF	20%	10V
C610	1-126-157-11	ELECT	10uF	20%	16V
C611	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C612	1-124-584-00	ELECT	100uF	20%	10V
C613	1-126-157-11	ELECT	10uF	20%	16V
C614	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C615	1-136-165-00	FILM	0.1uF	5%	50V
C616	1-128-134-11	ELECT	100uF	20%	16V
C617	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C618	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C619	1-126-301-11	ELECT	1uF	20%	50V
C620	1-126-157-11	ELECT	10uF	20%	16V
C621	1-164-005-11	CERAMIC CHIP	0.47uF		25V
		< JACK >			
CN901	1-770-279-11	JACK, ANTENNA (ISO) (ANTENNA)			
		< CONNECTOR >			
* CN902	1-506-993-11	PIN, CONNECTOR (PC BOARD) 11P			
CN904	1-774-701-11	PIN, CONNECTOR 16P			
CN905	1-764-422-11	PLUG, CONNECTOR 12P			
		< DIODE >			
D1	8-719-991-33	DIODE 1SS133T-77			
D2	8-719-040-04	DIODE MA721WK-(TX)			
D3	8-719-991-33	DIODE 1SS133T-77			
D4	8-719-991-33	DIODE 1SS133T-77			
D5	8-719-921-54	DIODE MTZJ-6.2B			
D6	8-719-921-54	DIODE MTZJ-6.2B			
D7	8-719-991-33	DIODE 1SS133T-77			
D10	8-719-921-54	DIODE MTZJ-6.2B			
D11	8-719-921-54	DIODE MTZJ-6.2B			
D12	8-719-921-54	DIODE MTZJ-6.2B			
D14	8-719-921-54	DIODE MTZJ-6.2B			
D15	8-719-991-33	DIODE 1SS133T-77 (XR-3208MK2/3509)			
D16	8-719-991-33	DIODE 1SS133T-77 (XR-3509)			
D24	8-719-921-54	DIODE MTZJ-6.2B			
D25	8-719-921-54	DIODE MTZJ-6.2B			
D26	8-719-921-54	DIODE MTZJ-6.2B			
D350	8-719-984-80	DIODE 1SR139-200			
D500	8-719-914-43	DIODE DAN202K			
D600	8-719-049-38	DIODE 1N5404TU			
D601	8-719-991-33	DIODE 1SS133T-77			

Ref. No.	Part No.	Description			Remark
D602	8-719-034-43	DIODE MA4056-H(QZ)			
D603	8-719-921-74	DIODE MTZN-10A			
D604	8-719-991-33	DIODE 1SS133T-77			
D605	8-719-970-02	DIODE 1SR139-400			
D606	8-719-991-33	DIODE 1SS133T-77			
D607	8-719-921-63	DIODE MTZJ-7.5B			
D608	8-719-991-33	DIODE 1SS133T-77			
D609	8-719-970-02	DIODE 1SR139-400			
		< DISCHARGE GAP >			
DSP1	1-519-504-11	GAP, DISCHARGE			
		< FUSE >			
F901	1-532-982-11	FUSE (BLADE TYPE) (AUTO FUSE) 15A			
		< IC >			
IC1	8-759-399-26	IC LC7233N-9222			
IC350	8-759-924-46	IC BA4560F			
IC450	8-759-330-62	IC LC75383ED			
IC500	8-759-369-42	IC HA13153			
		< JUMPER RESISTOR >			
JC1	1-216-295-00	METAL CHIP	0	5%	1/10W
JC2	1-216-295-00	METAL CHIP	0	5%	1/10W
JC457	1-216-295-00	METAL CHIP	0	5%	1/10W
JC467	1-216-295-00	METAL CHIP	0	5%	1/10W
JC617	1-216-295-00	METAL CHIP	0	5%	1/10W
JC620	1-216-295-00	METAL CHIP	0	5%	1/10W
JC621	1-216-296-00	METAL CHIP	0	5%	1/8W
JC622	1-216-295-00	METAL CHIP	0	5%	1/10W
JC623	1-216-295-00	METAL CHIP	0	5%	1/10W
JC914	1-216-296-00	METAL CHIP	0	5%	1/8W
JC920	1-216-295-00	METAL CHIP	0	5%	1/10W
JC921	1-216-295-00	METAL CHIP	0	5%	1/10W
JC924	1-216-295-00	METAL CHIP	0	5%	1/10W
		< COIL >			
L1	1-410-513-11	INDUCTOR 22uH			
L2	1-414-137-31	INDUCTOR 0.22uH (XR-3509)			
L3	1-410-065-11	INDUCTOR 3.3mH (XR-3509)			
L7	1-414-014-11	INDUCTOR 0.1uH			
L601	1-411-669-12	COIL, CHOKE			
		< TRANSISTOR >			
Q1	8-729-901-01	TRANSISTOR DTC144EK			
Q2	8-729-901-01	TRANSISTOR DTC144EK			
Q3	8-729-901-01	TRANSISTOR DTC144EK			
Q5	8-729-901-06	TRANSISTOR DTA144EK			
Q6	8-729-901-01	TRANSISTOR DTC144EK			

MAIN

Ref. No.	Part No.	Description	Remark
Q8	8-729-901-01	TRANSISTOR DTC144EK	
Q9	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q10	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q11	8-729-901-97	TRANSISTOR 2SA1036K-Q	
Q12	8-729-901-00	TRANSISTOR DTC124EK	
Q13	8-729-901-97	TRANSISTOR 2SA1036K-Q	
Q14	8-729-901-00	TRANSISTOR DTC124EK	
Q15	8-729-901-00	TRANSISTOR DTC124EK	
Q350	8-729-205-94	TRANSISTOR 2SA1428-O	
Q351	8-729-900-53	TRANSISTOR DTC114EK	
Q500	8-729-920-21	TRANSISTOR DTC314TKH04	
Q501	8-729-920-21	TRANSISTOR DTC314TKH04	
Q502	8-729-920-21	TRANSISTOR DTC314TKH04	
Q503	8-729-920-21	TRANSISTOR DTC314TKH04	
Q504	8-729-900-51	TRANSISTOR DTA114TK	
Q505	8-729-901-00	TRANSISTOR DTC124EK	
Q506	8-729-216-22	TRANSISTOR 2SA1162-G	
Q507	8-729-901-06	TRANSISTOR DTA144EK	
Q600	8-729-205-97	TRANSISTOR 2SC3668-Y	
Q601	8-729-209-15	TRANSISTOR 2SD2012	
Q602	8-729-216-22	TRANSISTOR 2SA1162-G	
Q603	8-729-901-97	TRANSISTOR 2SA1036K-Q	
Q604	8-729-900-53	TRANSISTOR DTC114EK	
Q605	8-729-205-94	TRANSISTOR 2SA1428-O	
Q606	8-729-216-22	TRANSISTOR 2SA1162-G	
Q607	8-729-902-99	TRANSISTOR DTC114TK	
Q610	8-729-901-06	TRANSISTOR DTA144EK	
Q611	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
		< RESISTOR >	
R1	1-249-417-11	CARBON 1K 5% 1/4W	
R2	1-216-049-11	METAL GLAZE 1K 5% 1/10W	
R3	1-247-895-00	CARBON 470K 5% 1/4W (XR-3208MK2/3501MK2)	
R3	1-247-876-11	CARBON 75K 5% 1/4W (XR-3509)	
R4	1-247-879-11	CARBON 100K 5% 1/4W	
R5	1-247-879-11	CARBON 100K 5% 1/4W	
R6	1-247-879-11	CARBON 100K 5% 1/4W	
R7	1-247-855-11	CARBON 10K 5% 1/4W	
R8	1-247-867-11	CARBON 33K 5% 1/4W	
R9	1-216-049-11	METAL GLAZE 1K 5% 1/10W	
R10	1-216-049-11	METAL GLAZE 1K 5% 1/10W	
R11	1-216-049-11	METAL GLAZE 1K 5% 1/10W	
R12	1-249-417-11	CARBON 1K 5% 1/4W	
R13	1-249-417-11	CARBON 1K 5% 1/4W	
R14	1-249-417-11	CARBON 1K 5% 1/4W	
R15	1-249-417-11	CARBON 1K 5% 1/4W	
R16	1-247-879-11	CARBON 100K 5% 1/4W	
R17	1-247-879-11	CARBON 100K 5% 1/4W	

Ref. No.	Part No.	Description	Remark
R18	1-216-049-11	METAL GLAZE 1K 5% 1/10W	
R19	1-216-049-11	METAL GLAZE 1K 5% 1/10W	
R20	1-249-417-11	CARBON 1K 5% 1/4W	
R21	1-249-417-11	CARBON 1K 5% 1/4W	
R22	1-249-417-11	CARBON 1K 5% 1/4W	
R23	1-249-417-11	CARBON 1K 5% 1/4W	
R24	1-216-049-11	METAL GLAZE 1K 5% 1/10W	
R25	1-216-049-11	METAL GLAZE 1K 5% 1/10W	
R26	1-216-049-11	METAL GLAZE 1K 5% 1/10W	
R27	1-216-049-11	METAL GLAZE 1K 5% 1/10W	
R28	1-216-049-11	METAL GLAZE 1K 5% 1/10W	
R29	1-216-049-11	METAL GLAZE 1K 5% 1/10W	
R30	1-216-049-11	METAL GLAZE 1K 5% 1/10W	
R31	1-208-806-11	METAL GLAZE 10K 1% 1/10W	
R32	1-249-417-11	CARBON 1K 5% 1/4W	
R33	1-216-198-00	METAL CHIP 1K 5% 1/8W	
R34	1-216-198-00	METAL CHIP 1K 5% 1/8W	
R35	1-247-827-11	CARBON 680 5% 1/4W	
R36	1-249-417-11	CARBON 1K 5% 1/4W	
R37	1-249-417-11	CARBON 1K 5% 1/4W	
R38	1-249-417-11	CARBON 1K 5% 1/4W	
R39	1-216-113-00	METAL CHIP 470K 5% 1/10W	
R40	1-216-031-00	METAL CHIP 180 5% 1/10W	
R41	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R42	1-216-075-00	METAL CHIP 12K 5% 1/10W	
R44	1-249-383-11	CARBON 10 5% 1/4W	
R47	1-247-775-11	CARBON 4.7 5% 1/4W	
R48	1-216-069-11	METAL GLAZE 6.8K 5% 1/10W	
R49	1-249-431-11	CARBON 15K 5% 1/4W	
R51	1-249-411-11	CARBON 330 5% 1/4W	
R54	1-216-049-11	METAL GLAZE 1K 5% 1/10W	
R55	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R56	1-216-198-00	METAL CHIP 1K 5% 1/8W	
R57	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R58	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R59	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R60	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R61	1-247-855-11	CARBON 10K 5% 1/4W	
R62	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R67	1-247-879-11	CARBON 100K 5% 1/4W	
R68	1-247-867-11	CARBON 33K 5% 1/4W	
R70	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R75	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R76	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R77	1-216-071-00	METAL CHIP 8.2K 5% 1/10W	
R78	1-216-075-00	METAL CHIP 12K 5% 1/10W	
R79	1-216-075-00	METAL CHIP 12K 5% 1/10W	
R80	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R81	1-216-073-00	METAL CHIP 10K 5% 1/10W	

Ref. No.	Part No.	Description			Remark
R350	1-249-418-11	CARBON	1.2K	5%	1/4W
R352	1-216-073-00	METAL CHIP	10K	5%	1/10W
R353	1-216-089-00	METAL CHIP	47K	5%	1/10W
R354	1-216-164-00	METAL GLAZE	39	5%	1/8W
R355	1-216-077-00	METAL CHIP	15K	5%	1/10W
R356	1-216-115-00	METAL CHIP	560K	5%	1/10W
R357	1-247-855-11	CARBON	10K	5%	1/4W
R358	1-247-855-11	CARBON	10K	5%	1/4W
R359	1-216-025-00	METAL CHIP	100	5%	1/10W
R360	1-216-115-00	METAL CHIP	560K	5%	1/10W
R361	1-216-077-00	METAL CHIP	15K	5%	1/10W
R362	1-216-015-00	METAL CHIP	39	5%	1/10W
R363	1-216-089-00	METAL CHIP	47K	5%	1/10W
R450	1-216-150-00	METAL GLAZE	10	5%	1/8W
R451	1-216-097-00	METAL CHIP	100K	5%	1/10W
R452	1-216-097-00	METAL CHIP	100K	5%	1/10W
R500	1-216-073-00	METAL CHIP	10K	5%	1/10W
R501	1-216-073-00	METAL CHIP	10K	5%	1/10W
R502	1-216-073-00	METAL CHIP	10K	5%	1/10W
R503	1-216-073-00	METAL CHIP	10K	5%	1/10W
R504	1-216-049-11	METAL GLAZE	1K	5%	1/10W
R505	1-216-049-11	METAL GLAZE	1K	5%	1/10W
R506	1-216-049-11	METAL GLAZE	1K	5%	1/10W
R507	1-216-198-00	METAL CHIP	1K	5%	1/8W
R508	1-216-224-00	METAL GLAZE	12K	5%	1/8W
R509	1-216-224-00	METAL GLAZE	12K	5%	1/8W
R510	1-216-224-00	METAL GLAZE	12K	5%	1/8W
R511	1-216-224-00	METAL GLAZE	12K	5%	1/8W
R512	1-216-077-00	METAL CHIP	15K	5%	1/10W
R513	1-216-077-00	METAL CHIP	15K	5%	1/10W
R514	1-216-077-00	METAL CHIP	15K	5%	1/10W
R515	1-216-077-00	METAL CHIP	15K	5%	1/10W
R516	1-216-129-00	METAL CHIP	2.2M	5%	1/10W
R517	1-216-129-00	METAL CHIP	2.2M	5%	1/10W
R518	1-216-129-00	METAL CHIP	2.2M	5%	1/10W
R519	1-216-129-00	METAL CHIP	2.2M	5%	1/10W
R520	1-247-843-11	CARBON	3.3K	5%	1/4W
R521	1-216-073-00	METAL CHIP	10K	5%	1/10W
R522	1-216-073-00	METAL CHIP	10K	5%	1/10W
R531	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R533	1-216-220-00	METAL GLAZE	8.2K	5%	1/8W
R534	1-216-073-00	METAL CHIP	10K	5%	1/10W
R535	1-216-071-00	METAL CHIP	8.2K	5%	1/10W
R600	1-216-073-00	METAL CHIP	10K	5%	1/10W
R601	1-216-071-00	METAL CHIP	8.2K	5%	1/10W
R602	1-216-081-00	METAL CHIP	22K	5%	1/10W
R603	1-247-807-11	CARBON	100	5%	1/4W
R604	1-216-041-11	METAL GLAZE	470	5%	1/10W
R605	1-216-373-11	METAL OXIDE	2.2	5%	2W F
R606	1-216-081-00	METAL CHIP	22K	5%	1/10W
R607	1-247-835-11	CARBON	1.5K	5%	1/4W
R608	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R609	1-216-073-00	METAL CHIP	10K	5%	1/10W
R610	1-247-835-11	CARBON	1.5K	5%	1/4W
R611	1-216-357-00	METAL OXIDE	4.7	5%	1W F
R613	1-216-089-00	METAL CHIP	47K	5%	1/10W
R614	1-216-097-00	METAL CHIP	100K	5%	1/10W
R615	1-216-081-00	METAL CHIP	22K	5%	1/10W
R616	1-216-230-00	METAL GLAZE	22K	5%	1/8W
R618	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R619	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
		< TUNER >			
TU1	A-3282-012-A	TUNER UNIT (TUX-006(E))			
		< VIBRATOR >			
X1	1-567-713-11	VIBRATOR, CRYSTAL (4.5MHz)			

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Sony Corporation
Personal & Mobile Communication Company

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SONY

AEP Model
UK Model

SERVICE MANUAL

CORRECTION-1

Correct your service manual as shown below.

☛ : **indicates corrected portion.**

Page	INCORRECT				CORRECT		
	Ref. No.	Part No.	Description	Remark	Part No.	Description	Remark
17	L7	1-414-014-11	INDUCTOR 0.1uH		1-412-478-11	MICRO INDUCTOR 0.15uH	

(SPM-99012)

Note : See the appropriate page of the Service manual supplement-2.

9-923-488-91

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